



Bristol-Myers Squibb Manufacturing Company

***RCRA Corrective Action Program
Quarterly Progress Report No. 64
3rd Quarter 2016***

***Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico***

October 2016



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1.0 *Introduction*

Bristol-Myers Squibb Manufacturing Company (BMSMC) is currently implementing a Resource Conservation and Recovery Act (RCRA) Corrective Action Program at its pharmaceutical manufacturing facility located in Humacao, Puerto Rico. The program is being conducted in accordance with the provisions of Module III of BMSMC's Final RCRA Hazardous Waste Treatment and Storage Permit No. PRD090021056.

This quarterly progress report has been prepared in accordance with the provisions of Module III, Condition B.8 (a) of the Permit. The report covers the period July 1, 2016 through September 30, 2016. All available information required by Condition B.8 (a)(i) through (viii) is provided below.¹

The RCRA Corrective Action Program addresses three solid waste management units (SWMUs) at which impacts to soil and/or groundwater have been detected. The status of the corrective action program at each SWMU is briefly described below.

- Former Underground Tank Farm (SWMU #3) – The Former Tank Farm (FTF) area consisted of 26 underground storage tanks for the storage of raw materials, kerosene and spent solvents for reclamation. BMSMC submitted a Corrective Measure Study (CMS) Report to United States Environmental Protection Agency (USEPA) in June 2007 that documented the improving groundwater quality and provided recommendations for the Final Corrective Measure. An updated CMS report was submitted to the USEPA in July 2011.

BMSMC conducted quarterly groundwater sampling at seven wells at this SWMU from March 2000 to December 2010 as part of the site-wide monitoring program. On March 12, 2010 BMSMC submitted a request for a permit modification to reduce the groundwater monitoring program. Based on USEPA comments, BMSMC submitted a revised request for a permit modification to the USEPA on July 20, 2010. BMSMC received approval for the permit modification from the USEPA on December 29, 2010. The reduction in groundwater monitoring as detailed in the permit modification was initiated during the March 2011 groundwater sampling event. As per the permit modification, monitoring wells at SWMU #3 are sampled semiannually. Semiannual sampling started with the March 2011 sampling event.

¹ A PDF version of the complete Quarterly Progress Report No. 64 including text, tables, figures, and appendices is provided on the back cover of this document.

Monitoring wells MW-17 and MW-18, installed during the 2011 Supplemental Field Investigation, were sampled on a voluntary basis from June 2011 to June 2012. A request to include monitoring wells MW-17 and MW-18 into the SWMU #3 groundwater monitoring network was included in the Class 2 Permit Modification Request filed with the USEPA on May 16, 2012. On August 14, 2012, BMSMC received approval for the Class 2 Permit Modification incorporating monitoring wells MW-17 and MW-18 into the groundwater monitoring network. Monitoring wells MW-17 and MW-18 were incorporated into the groundwater-monitoring network beginning with the September 2012 groundwater sampling event.

A new monitoring well, MW-19, was installed in the Former Underground Tank Farm Area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the July 2015 response to USEPA Comments on the 2011 CMS.

- Former Brule Incinerator (SWMU #9) - This SWMU is the site of a former hazardous waste incinerator. The interim corrective measure (ICM) consisted of excavation of petroleum impacted soil. The *Interim Corrective Measure Implementation Report* was submitted to USEPA in February 2002. This report was approved by USEPA in a letter dated March 28, 2002.

A new monitoring well, BR-4, was installed in the Brule area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the July 2015 Response to USEPA Comments on the 2011 CMS.

- Building 5 Area (SWMU #20) - This SWMU encompasses an area adjacent to and east of Building 5. BMSMC submitted a revised CMS Report to USEPA in June 2007 that provided recommendations for the Final Corrective Measure. The recommended corrective measure included a combination of source area excavation and Monitored Natural Attenuation (MNA). An updated CMS report was submitted to the USEPA in July 2011.

BMSMC implemented an Interim Corrective Measure (ICM) to address source area soils in the Building 5 Area. The ICM Work Plan, which included four phases of excavation, treatment, and reuse or offsite disposal of impacted soil, was submitted to USEPA in September 2003 and approved by USEPA in December 2004. Four phases of soil excavation and treatment were conducted between 2006 and 2011 during which approximately 7,400 cubic yards of soil was excavated and treated. Each of the

excavation areas (Phase 1 through Phase 4; designated as Areas A through D) are shown on **Figure 1**.

On August 14, 2012, BMSMC received approval for a Class 2 Permit Modification for Temporary Authorization to operate a temporary unit (TU) for the ex-situ treatment of contaminated soil excavated from Area E and the remaining unexcavated soil from Area D that was left in place during the ICM. In addition, the USEPA approved the May 2012 *Temporary Unit Operations and Maintenance Plan* (O&M Plan) and the May 2012 *Building 5 Area Interim Corrective Measure Work Plan Area E*. Area E ICM soil removal activities were conducted from February 6, 2013 through March 2, 2013. Approximately 1,728 cubic yards of impacted soil were removed and placed into the Biopile for treatment. The Area E excavation area is shown on **Figure 1**.

BMSMC conducted quarterly groundwater sampling at the SWMU #20 from March 2000 to December 2010 as part of the site-wide monitoring program. As per the December 2010 approved permit modification, BMSMC initiated a reduced groundwater monitoring program in March 2011. The reduced groundwater monitoring program includes quarterly sampling at seven wells and semiannual sampling at 13 wells. Semiannual sampling was initiated in March 2011. Semiannual samples are collected in March and September.

On August 14, 2012, BMSMC received approval for the Class 2 Permit Modification to reactivate monitoring well D-1. Semiannual sampling of monitoring well D-1 was initiated in September 2012.

On March 13, 2013, BMSMC received conditional approval of the Class 2 Permit Modification Request for the closure of three existing monitoring wells (G-1R2, D-1, and E-1) and the installation of three replacement monitoring wells (G-1R3, D-1R, and E-1R). Conditional approval of the Class 2 Modification Request was granted pending a determination that replacement well G-1R3 complies with the objectives of the groundwater monitoring program and effectively captures the Building 5 COCs.

On September 18, 2013, BMSMC, in response to the conditional approval of the March 13, 2013 Class 2 Permit Modification Request, submitted a technical memorandum to the USEPA demonstrating the effectiveness and adequacy of the replacement monitoring wells D-1R, E-1R, and G-1R3 to capture the Building 5 COCs.

On May 5, 2014, BMSMC submitted a Class 1 Permit Modification requesting an extension of 45 days to remove hazardous soil, and the remaining non-hazardous soil that met the cleanup criteria as provided in BMSMC Permit Temporary Unit Operations and Maintenance Plan, beyond the previously permitted 90 day removal period.

On June 19, 2014, BMSMC received final approval of the Class 2 Permit Modification Request for the closure of three existing monitoring wells (G-1R2, D-1, and E-1) and the installation of three replacement monitoring wells (G-1R3, D-1R, and E-1R).

On November 14, 2014, BMSMC received conditional approval of the *Building 5 Soil Vapor Investigation Work Plan*. The Work Plan was conditionally approved by the USEPA pending the receipt of a revised work plan that addressed minor comments within 45 days of the approval letter. The revised Work Plan was submitted to the USEPA on December 4, 2014.

On February 23, 2015, BMSMC received Comments on the Building 5 Area Source Removal Phase 5 Implementation Report from the USEPA. The comment letter stated that BMSMC must submit a revised *Building 5 Area Source Removal Phase 5 Implementation Report* within 45 days of February 23, 2015. The revised *Building 5 Area Source Removal Phase 5 Implementation Report* was submitted to the USEPA on April 8, 2015.

A new monitoring well pair, S-39S/S-39D, was installed in the Building 5 Area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the March 2016 Release Assessment Sampling and Analysis Plan.²

- Site-Wide

On March 14, 2013, BMSMC received the approved USEPA RCRA Permit Application Technical and Administrative Completeness Determination Letter for the May 2010 RCRA Part B Permit Application.

On February 26, 2015, BMSMC received Comments on the Corrective Measures Study Report (July 2011) from the USEPA. In the comment letter, the USEPA stated that BMSMC must submit a revised *Corrective Measures Study Report* within 60 days of February 26, 2015.

² In the July 2016 Response to USEPA Comments on the 2011 CMS, this location was initially targeted for a direct push soil boring only.

On June 3, 2015, BMSMC received a letter from the USEPA that granted a time extension to respond to the Comments on the Corrective Measures Study. In the time extension letter, the USEPA granted a time extension until July 24, 2015 for the submittal of a revised *Corrective Measures Study Report*.

On July 22, 2015, BMSMC submitted the *Response to USEPA Comments on July 2011 CMS Report* to the USEPA. The Response to USEPA Comments proposed additional work in each of the three SWMUs (FTF, Brule, and Building 5 Areas) to address USEPA comments on the July 2011 CMS.

On January 27, 2016, BMSMC submitted a Release Notification Letter to the USEPA that identified certain constituents present in groundwater that are currently not included under the Corrective Action Program.

On February 26, 2016, BMSMC submitted a *Release Assessment Report* to the USEPA that identified specific constituents as new compounds of potential concern (COPCs) in the site's SWMUs.

On March 25, 2016, BMSMC submitted a *Release Assessment Sampling and Analysis Plan*, including an updated *Quality Assurance Project Plan* (QAPP), to complete a groundwater and soil investigation to evaluate potential release(s) of COPCs.

On June 14, 2016, BMSMC submitted a *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*, including an updated QAPP, to complete a groundwater investigation to evaluate the potential offsite migration of COPCs in groundwater to the south and southeast of the BMSMC facility.

On August 5, 2016, BMSMC submitted a *Preliminary Notification of Possible Off-site Groundwater Contamination* in accordance with Module III.B.10.a of the Facility RCRA Part B Permit. The Preliminary Notification letter identified the possible off-site migration of low levels of COPCs that exceed background levels under the Ciudad Cristiana community.

On September 7, 2016, BMSMC submitted the *Release Assessment Phase 1 Technical Memorandum* to the USEPA, which presented the findings of the completed Phase 1 groundwater and soil investigation.

On September 7, 2016, BMSMC submitted the *Supplemental Vapor Intrusion Investigation Report Buildings 7, 8, 15, 18, 30, 42* to the USEPA, which presented the

findings of the completed vapor intrusion investigations at Buildings 7, 8, 15, 18, 30, and 42.

On September 9, 2016, BMSMC submitted a *Notification of Possible Off-site Groundwater Contamination* in accordance with Module III.B.10.a of the Facility RCRA Part B Permit. The Notification letter confirmed the off-site migration of low levels of COPCs that exceed background levels under the Ciudad Cristiana residential community.

On September 22, 2016, BMSMC received comments on the February 2016 *Release Assessment Report*.

On September 22, 2016, BMSMC received comments from the USEPA and the Puerto Rico Environmental Quality Board (PREQB) on the March 2016 *Release Assessment Work Plan* and the June 2016 *Release Assessment Phase 2A Work Plan: Offsite Groundwater – South of Facility*.

On September 22, 2016, BMSMC received notification that BMSMC's 2015 *Hazardous Waste Minimization Plan* was found to be in accordance with the Facility RCRA Part B Permit.

2.0 Description of Work Completed

A description of corrective action activities completed between July 1, 2016 and September 30, 2016 is presented in this section.

2.1. Site-Wide

2.1.1. Vapor Intrusion Program

- Indoor air and co-located sub-slab soil gas samples collected in Building 7 and a sub-slab soil gas sample collected in Building 15 in June 2016 were validated. Laboratory analytical results and data validation reports for the June 2016 Building 7 and Building 15 vapor intrusion samples are provided on compact disc (CD) in **Attachment A**.
- In July 2016, one round of indoor air samples co-located with sub-slab soil gas samples were collected in Building 18. Specifically, six indoor air samples, including one duplicate sample, six sub-slab soil gas samples, including one duplicate sample, and one ambient air sample were collected at Building 18. Vapor intrusion sampling was conducted in accordance with the methods outlined

in the USEPA approved December 2014 *Building 5 Soil Vapor Intrusion Work Plan*. Samples were analyzed for VOCs according to USEPA Compendium Method TO-15 and naphthalene according to USEPA Compendium Method TO-17. Laboratory analytical results and data validation reports for the July 2016 Building 18 vapor intrusion samples are provided on CD in **Attachment A**.

- Results of the on-going vapor intrusion investigation are discussed in the *Supplemental Vapor Intrusion Investigation Report Buildings 7, 8, 15, 18, 30, 42*.

2.1.2. Release Assessment Phase 1 Program

- Results of the 2nd Q 2016 groundwater samples collected from interior monitoring wells installed during the Release Assessment Phase 1 Field Program (MW-21S, MW-22S, MW-23S, RA-10S, and RA-10D) were validated in accordance with USEPA Region 2 guidelines. Phase 1 sample locations are shown on **Figure 2**. The laboratory analytical results and data validation reports are provided on CD in **Attachment B**.
- The 3rd Q 2016 groundwater sampling event was conducted in September 2016. This was an expanded groundwater sampling event and included each on the new monitoring wells installed during the Phase 1 Release Assessment Field Program (MW-21S, MW-22S, MW-23S, RA-10S, RA-10D, MW-20D, MW-20S, S-35D, S-40D, S-40S, S-41D, S-41S, S-42D, S-42S, S-43D, and S-43S). Groundwater samples were analyzed for the following parameters:
 - Full target compound list (TCL) volatile organic compounds (VOCs) plus Tetrahydrofuran, p-Isopropyl toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol according to SW-846 Method 8260C;
 - Full TCL semivolatile organic compounds (SVOCs) plus 1-Methylnaphthalene, according to SW-846 Method 8270D;
 - Naphthalene and 1,4-Dioxane according to SW-846 Method 8270D with Selective Ion Monitoring (SIM);
 - Low molecular weight (LMAs) according to SW-846 Method 8015C by direct aqueous injection (DAI);
 - Organochlorine Pesticides according to SW-846 Method 8081B;

- Volatile petroleum hydrocarbons (VPH) according to Massachusetts Department of Environmental Protection (MADEP) VPH-Revision 1.1; and
- Extractable petroleum hydrocarbons (EPH) according to MADEP EPH Revision 1.1;
- Results from the 3rd Q 2016 sampling event will be included in the 4th Q 2016 Progress Report.

2.1.3. Release Assessment Phase 2A Program

- Release Assessment Phase 2A field activities were conducted from June to August 2016 in accordance with the June 2016 *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*. Phase 2A Release Assessment sample locations are provided on **Figure 3**. The Release Assessment Phase 2A sampling program included:
 - Installation of 20 offsite direct push soil borings;
 - Collection and analysis of 30 in-situ groundwater samples;
 - Installation, development, and sampling of 12 offsite monitoring wells.
 - Groundwater samples were analyzed for the following parameters:³
 - Benzene, MTBE, and tert-Amyl Alcohol according to SW-846 Method 8260C;
 - 1,4-Dioxane and Naphthalene according to SW-846 Method 8270D SIM;
 - EPH according to MADEP-EPH Revision 1.1; and
 - Polycyclic Aromatic Hydrocarbons (PAHs) according to MADEP-EPH Revision 1.1.

³ Due to insufficient sample volume, one shallow groundwater sample (OSGP-10) was only analyzed for Benzene, MTBE, tert-Amyl Alcohol, 1,4-Dioxane, and Naphthalene according to SW-846 Method 8260C.

- All in-situ groundwater samples and groundwater samples collected from the offsite monitoring wells during the Phase 2A Field Program were validated in accordance with USEPA Region 2 guidelines. Laboratory analytical results and data validation reports for these samples collected during the Phase 2A Release Assessment are provided on compact disk (CD) in **Attachment C**.
- Results of the Phase 2A Release Assessment will be presented in the *Phase 2A Release Assessment Technical Memorandum* to be submitted to the USEPA on October 14, 2016.
- A Release Assessment Update meeting was held on September 7, 2016 at the USEPA office in Guaynabo, Puerto Rico. The meeting was attended by USEPA-CEPD, PREQB, BMSMC, and Torrés & Garcia PSC. Other personnel from the USEPA, BMSMC, Lowenstein Sandler LLP, and Booz Allen Hamilton (USEPA contractor) participated in the meeting via telephone or videoconference.

2.2. Former Tank Farm Area

- Results of the 2nd Q 2016 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 4**. The laboratory analytical results and data validation reports are provided on CD in **Attachment D**. Field data sheets are included on CD in **Attachment E**.
- The 3rd Q 2016 groundwater sampling was conducted in September 2016. This was an expanded groundwater sampling event and included the FTF Area monitoring wells currently in the groundwater monitoring program (MW-3, MW-5, MW-7, MW-13, MW-14, MW-15, MW-16, MW-17, and MW-18), as well as upgradient monitoring well MW-9, and interior monitoring well MW-19 (installed during the Release Assessment Phase 1 Field Program).⁴ Groundwater samples were analyzed for the following parameters:

⁴ Monitoring well MW-19 was installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate the presence of groundwater impacts within the FTF Area.

- Full TCL VOCs plus Tetrahydrofuran, p-Isopropyl toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- Full TCL SVOCs plus 1-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C by DAI;
- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.
- Results from the 3rd Q 2016 sampling event will be included in the 4th Q 2016 Progress Report.

2.3. Brule Area

- Results of the 2nd Q 2016 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 5**. The laboratory analytical results and data validation reports are provided on CD in **Attachment D**. Field data sheets are included on CD in **Attachment E**.
- The 3rd Q 2016 groundwater sampling was conducted in September 2016. This sampling event included the collection of groundwater samples at monitoring wells BR-1, BR-2, and BR-3, as well as monitoring well BR-4 (installed during the Release Assessment Phase 1 Field Program).⁵ Groundwater samples were analyzed for the following parameters:
 - Full TCL VOCs plus Tetrahydrofuran, p-Isopropyl toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol according to SW-846 Method 8260C;
 - Full TCL SVOCs plus 1-Methylnaphthalene, according to SW-846 Method 8270D;

⁵ Monitoring well BR-4 was installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate petroleum hydrocarbon impacts in the Brule Area.

- Naphthalene and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C by DAI;
- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.
- Results of the 3rd Q 2016 sampling event will be included in the 4th Q 2016 Progress Report.

2.4. *Building 5 Area*

- Results of the 2nd Q 2016 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 6**. The laboratory analytical results and data validation reports are provided on CD in **Attachment D**. Field data sheets are included on CD in **Attachment E**.
- In July 2016, an indoor air sample was collected in Building 30 to evaluate indoor air quality after the deployment of five portable air purifiers equipped with granular activated carbon (GAC) filters. The sample was analyzed for VOCs according to USEPA Compendium Method TO-15 and naphthalene according to USEPA Compendium Method TO-17. Laboratory analytical results and data validation reports for the Building 30 vapor intrusion sample are provided on CD in **Attachment A**.
- The 3rd Q 2016 groundwater sampling event was conducted in September 2016. This was an expanded groundwater sampling event and included the Building 5 Area monitoring wells sampled quarterly [UP-1, A-1R(4), A-2R(2), G-1R(3), S-31R(2), S-32, and S-33], Building 5 Area monitoring wells sampled semiannually (E-1R, D-1R, S-29R, S-34, S-35, S-36, and UP-2), and Building 5 Area monitoring wells not currently in the groundwater monitoring program (S-28, S-30, S-37, S-38, S-39S, S-39D, and MW-11). Groundwater samples were analyzed for the following parameters:
 - Full TCL VOCs plus Tetrahydrofuran, p-Isopropyl toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol according to SW-846 Method 8260C;

- Full TCL SVOCs plus 1-Methylnaphthalene, according to SW-846 Method 8270D;
 - Naphthalene and 1,4-Dioxane according to SW-846 Method 8270D SIM;
 - LMAs according to SW-846 Method 8015C DAI;
 - Full TCL organochlorine pesticides according to SW-846 Method 8081B;
 - VPH according to MADEP VPH Revision 1.1; and
 - EPH according to MADEP EPH Revision 1.1.
- Results of the 3rd Q 2016 sampling event will be included in the 4th Q 2016 Progress Report.

3.0 Summary of Findings

This section presents a summary of findings based on groundwater samples collected as part of the 2nd Q 2016 groundwater monitoring program as well as vapor intrusion samples collected during the 2nd Q 2016 and validated during the 3rd Q 2016.

3.1. Former Tank Farm Area

The 2nd Q 2016 groundwater sample results from the Former Tank Farm Area were compared to the USEPA MCLs or the May 2016 USEPA Regional Screening Levels (RSLs) for tap water in cases where MCLs have not been developed.⁶ MCLs, the May 2016 RSLs for tap water, and the April 2016 Puerto Rico Water Quality Standards (PRWQS) for the Former Tank Farm Area COCs are provided in the table below.

Parameter	MCL ($\mu\text{g/L}$)	Tap Water RSL ($\mu\text{g/L}$)	PRWQS ($\mu\text{g/L}$)
Acetone	---	14,000	---
MIBK	---	6,300	---
Chloromethane	---	190	---
Methylene Chloride	5	---	46
Xylenes (Total)	10,000	---	---

⁶ In addition, since the MCL for Methylene Chloride is less than the Puerto Rico Water Quality Standard for this compound, the MCL was used for comparison purposes.

Groundwater analytical results for samples collected in the FTF Area during the June 2016 groundwater sampling event are presented in **Table 1**. Results are grouped by FTF Area COCs and other COPCs, including other VOCs, polycyclic aromatic hydrocarbons (PAHs), VPH/EPH, and SVOCs. May 2016 RSLs are also provided in **Table 1**.

Total Xylenes (MW-19) was the only FTF COC detected above its May 2016 RSL. VOC COPCs detected above their respective groundwater screening level included Ethylbenzene, 1,4-Dioxane, and Methyl Tert-Butyl Ether (MTBE). SVOC/PAH COPCs detected above their respective groundwater screening level included 1-Methylnaphthalene, Naphthalene, and 4-Chloroaniline. VPH fractions detected above their respective groundwater screening level included C9-C12 Aliphatics and C9-C10 Aromatics. C11-C22 Aromatics was the only EPH fraction detected above its screening level.

3.2. Brule Area

Groundwater analytical results for samples collected in the Brule Area during the June 2016 groundwater sampling event are presented in **Table 2**. Results are grouped by analyte group (VOCs, PAHs, VPH/EPH, and SVOCs). May 2016 RSLs and April 2016 PRWQSSs are also provided in **Table 2**.

1,4-Dioxane was the only VOC COPC detected above its groundwater screening level. SVOC COPCs detected above their respective groundwater screening level included Naphthalene and 4-Chloroaniline. C11-C22 Aromatics was the only EPH fraction detected above its screening level. No VPH fractions were detected above their respective screening levels.

3.3. Building 5 Area

The 2nd Q 2016 groundwater sample results from the Building 5 Area were compared to the USEPA MCLs or the May 2016 USEPA Regional Screening Levels (RSLs) for tap water in cases where MCLs have not been developed.⁷ MCLs, the May 2016 RSLs for tap water, and the April 2016 PRWQSSs for the Building 5 Area COCs are provided in the table below.

⁷In addition, since the Puerto Rico Water Quality Standard for Ethylbenzene is less than the MCL, this standard was used in lieu of the MCL for comparison purposes.

Parameter	MCL ($\mu\text{g/L}$)	Tap Water RSL ($\mu\text{g/L}$)	PRWQS ($\mu\text{g/L}$)
Benzene	5	---	5
Ethylbenzene	700	---	530
Toluene	1,000	---	1,000
Xylenes (total)	10,000	---	---
Acetone	---	14,000	---
MIBK	---	6,300	---
Isopropyl Alcohol	---	410	---
Methanol	---	20,000	---

Groundwater analytical results for samples collected in the Building 5 Area during the June 2016 groundwater sampling event are presented in **Table 3**. Results are grouped by Building 5 Area COCs and COPCs, including other VOCs, PAHs, SVOCs, VPH/EPH, and organochlorine pesticides. May 2016 RSLs are also provided in **Table 3**.

The 2nd Q 2016 groundwater sampling results identified the COCs Benzene, Ethylbenzene, and Xylenes at concentrations in excess of MCLs or PRWQSSs. MCLs/PRWQSSs for one or more COCs were exceeded in in-plume wells A-1R4 (Benzene), G-1R(3) (Benzene, Ethylbenzene, and Xylene), S-31R(2) (Ethylbenzene), and S-32 (Ethylbenzene and Xylene).

The concentrations of Acetone, Benzene, Ethylbenzene, MIBK, Toluene, and Xylene within the Area E soil removal area remain significantly less than their respective pre-removal concentrations. Overall concentrations of COCs in Building 5 Area monitoring wells located downgradient of Area E were consistent with past events.

Other COPC VOCs detected above their respective groundwater screening level included 1,4-Dioxane, 1,1-Dichloroethane, and MTBE. COPC SVOCs detected above their respective groundwater screening level included Naphthalene and bis(2-Ethylhexyl)Phthalate. VPH fractions detected above their respective groundwater screening level included C9-C10 Aromatics and C9-C12 Aliphatics. EPH fractions detected above their respective groundwater screening level included C11-C22 Aromatics and C9-C18 Aliphatics. No organochlorine pesticides were detected above their respective groundwater screening level.

3.4. Vapor Intrusion Program

Results for vapor intrusion samples collected during the 2nd Q 2016 and validated during the 3rd Q 2016 are presented below. A more detailed discussion of the sampling results at

Buildings 7, 15, 18, and 30 are presented in the *Supplemental Vapor Intrusion Report Buildings 7, 8, 15, 18, 30, 42* submitted to the USEPA September 7, 2016.

3.4.1. Building 7

Validated analytical results for the June 2016 indoor air and ambient air samples collected at Building 7, are presented in **Table 4**. The USEPA industrial air screening levels are also provided in **Table 4**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that 1,2-Dichloroethane (1 sample) and Naphthalene (2 samples via Method TO-15 exceeded their respective industrial air RSL; no samples analyzed via Method TO-17 exceeded the naphthalene industrial air RSL).

Validated analytical results for the June 2016 sub-slab samples collected at Building 7 are presented in **Table 5**. The USEPA industrial sub-slab screening levels are also provided in **Table 5**. Sample results indicate that no compounds exceeded their respective industrial sub-slab RSL.

3.4.2. Building 15

Validated analytical results for the June 2016 sub-slab sample collected at Building 15, are presented in **Table 6**. The USEPA industrial air screening levels are also provided in **Table 6**. Sample results indicate that no compounds exceeded their respective industrial sub-slab RSL.

3.4.3. Building 18

Validated analytical results for the July 2016 indoor and ambient air samples collected at Building 18, are presented in **Table 7**. The USEPA industrial air screening levels are also provided in **Table 7**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that 1,2 Dichloroethane (6 samples), Trichloroethene (2 samples), and Naphthalene (1 sample via Method TO-17) exceeded their respective industrial air RSL. The 1,4-Dioxane in the ambient air sample also exceeded its USEPA industrial air RSL.

Validated analytical results for the July 2016 sub-slab samples collected at Building 18, are presented in **Table 8**. The USEPA industrial sub-slab screening levels are also provided in **Table 8**. Concentrations that exceed the USEPA industrial air RSLs are shaded. Sample results indicate that Naphthalene (1 sample via Method TO-17) exceeded its industrial sub-slab RSL.

3.4.4. Building 30

Validated analytical results for the July 2016 indoor air and ambient air samples collected at Building 30 are presented in **Table 9**. The USEPA industrial air screening levels are also provided in **Table 9**. Sample results indicate that no compounds exceeded their respective industrial air RSL.

4.0 Summary of Changes Made

- The CMS program is currently under evaluation pending final field activities that may require the expansion of the program to other areas or SWMUs within the facility, and the integration of additional wells into the current Facility Groundwater Monitoring Program among other changes.

5.0 Summary of Public Participation Activities

- A public meeting was held at the Cuidad Cristiana Community Basketball Court on September 20, 2016. The purpose of the meeting was to update the community on the progress and results of Phase 2A Release Assessment field sampling activities. The meeting was attended by USEPA-CEPD, PREQB, BMSMC, Torrés & García PSC, and residents of the Cuidad Cristiana neighborhood.

6.0 Summary of Problems Encountered

- There were no problems encountered relating to the RCRA Corrective Action Program during this reporting period.

7.0 Changes in Personnel

- There were no changes in personnel during this reporting period.

8.0 Projected Work for Next Reporting Period

Work scheduled to be performed during the three month period from October 1, 2016 through December 31, 2016 is described in this section.

8.1. Site-Wide

- The *Sewer Bedding/Utility Assessment Work Plan* will be submitted to the USEPA during the 4Q 2016.

- The *Phase 2B Release Assessment Sampling and Analysis Plan – Frontera Creek* may be submitted to the USEPA during the 4th Q 2016 (the Phase 2B evaluation will be performed after the completion of the Sewer Bedding Delineation/Utility Assessment).
- A response to comment letter that addresses USEPA and PREQB comments on the March 2016 *Release Assessment Work Plan* and the June 2016 *Release Assessment Phase 2A Work Plan: Offsite Groundwater – South of Facility* will be submitted to the USEPA during the 4th Q 2016. In addition, a revised Release Assessment Report that addresses the September 22, 2016 USEPA comments will be submitted to the USEPA during the 4th Q 2016.
- Semi-annual confirmatory indoor air sampling will be conducted at Building 30 in December 2016.
- Monitoring wells installed during the Release Assessment Phase 1 Field Program will be sampled during the 4th Q 2016 groundwater sampling event. Monitoring wells will be sampled for an expanded list of analytical parameters that will include full TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol, full TCL SVOCs plus 1-Methylnaphthalene, 1,4-Dioxane and Naphthalene by SIM, TCL LMAs, VPH, EPH, and full TCL organochlorine pesticides. A select number of wells will be sampled for monitored natural attenuation (MNA) parameters.
- Monitoring wells installed during the Release Assessment Phase 2A Program will be sampled during the 4th Q 2016 groundwater sampling event. The specific analytical parameter list for the Phase 2A groundwater sampling will be discussed with the USEPA prior to the 4th Q 2016 groundwater sampling.
- Activities related to hydrogeologic testing and groundwater treatability studies are tentatively scheduled for the 4th Q 2016.

8.2. Former Tank Farm Area

- The 3rd Q 2016 groundwater results will be validated.
- The 4th Q 2016 quarterly groundwater sampling event will be conducted in December 2016. Monitoring wells will be sampled for an expanded list of analytical parameters that will include full TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol, Full TCL SVOCs plus 1-

Methylnaphthalene, 1,4-Dioxane and Naphthalene by SIM, TCL LMAs, VPH, and EPH.
A select number of wells will be sampled for MNA parameters.

8.3. *Brule Area*

- The 3rd Q 2016 groundwater results will be validated.
- The 4th Q 2016 quarterly groundwater sampling event will be conducted in December 2016. Monitoring wells will be sampled for an expanded list of analytical parameters that will include full TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol, full TCL SVOCs plus 1-Methylnaphthalene, 1,4-Dioxane and Naphthalene by SIM, TCL LMAs, VPH, and EPH. A select number of wells will be sampled for MNA parameters.

8.4. *Building 5 Area*

- The 3rd Q 2016 groundwater results will be validated.
- The 4th Q 2016 quarterly groundwater sampling event will be conducted in December 2016. Monitoring wells will be sampled for an expanded list of analytical parameters that will include full TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, Benzyl Chloride, and tert-Amyl Alcohol, full TCL SVOCs plus 1-Methylnaphthalene, 1,4-Dioxane and Naphthalene by SIM, TCL LMAs, VPH, EPH, and full TCL organochlorine pesticides. A select number of wells will be sampled for MNA parameters.

9.0 *Additional Documentation*

- In addition to the documents listed in Section 1, a “Contained In” Determination letter was submitted to the USEPA on September 7, 2016.

Tables

Table 1
Former Tank Farm Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	MW-3	MW-5	MW-7	MW-9	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-17	MW-18	MW-19	
			6/16/2016	6/17/2016	6/10/2016	6/17/2016	6/17/2016	6/3/2016	6/3/2016	6/3/2016	6/17/2016	6/10/2016	6/10/2016	6/16/2016	
FTF Area COCs															
4-Methyl-2-pentanone (MIBK)	6300	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250	
Acetone	14000	---	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<1300	
Chloromethane	190	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
Methylene Chloride	5	46	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250	
Xylene (total)	10000	---	0.58 J	273	16.75 J	<3	<3	<3	<3	<3	<3	<3	0.69 J	19850	
Other VOCs															
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,1,2,2-Tetrachloroethane	0.076	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,1-Dichloroethane	2.8	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,1-Dichloroethene	7	7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,2,3-Trichlorobenzene	7	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
1,2,4-Trichlorobenzene	70	35	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
1,2,4-Trimethylbenzene	15	---	0.3 J	0.28 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,2-Dibromo-3-chloropropane	0.2	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250	
1,2-Dibromoethane	0.05	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
1,2-Dichlorobenzene	600	420	<1	<1	7.6	<1	1	<1	<1	<1	8	<1	0.64 J	<50	
1,2-Dichloroethane	5	3.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,2-Dichloropropane	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,3-Dichlorobenzene	---	320	<1	<1	0.28 J	<1	<1	<1	<1	<1	<1	<1	<1	<50	
1,4-Dichlorobenzene	75	63	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<1	<1	<50	
1,4-Dioxane	0.46	---	<0.11	0.568	1.36	0.398	0.152	3.07	3.54	1.57	0.334	13.6	0.723	<0.11	
2-Butanone (MEK)	5600	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<250	
2-Hexanone	38	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<500	
Benzene	5	5	<1	3.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.3 J	<50
Benzyl Chloride	0.089	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
Bromochloromethane	83	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Bromodichloromethane	80	5.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Bromoform	80	43	<1	<1	1 J	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Bromomethane	7.5	47	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
Carbon Disulfide	810	---	0.52 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
Carbon Tetrachloride	5	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Chlorobenzene	100	100	0.37 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.81 J	<50
Chloroethane	21000	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
Chloroform	80	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
cis-1,2-Dichloroethene	70	---	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
cis-1,3-Dichloropropene	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Cyclohexane	13000	---	2.3	<1	<1	<1	<1	<1	0.89 J	1.1	<1	<1	<1	2.4	<50
Dibromochloromethane	80	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Dichlorodifluoromethane	200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1.1 J	<100
Ethanol	---	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
Ethylbenzene	700	530	<1	76.7	8.1	<1	<1	<1	<1	<1	<1	<1	<1	6460	
Freon 113	55000	---	<1	<1	<1	<1	10.4	<1	<1	<1	70.2	<1	<1	<50	
Isobutyl Alcohol	5900	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
Isopropyl Alcohol	410	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
Isopropylbenzene	450	---	10	14.2	0.34 J	<1	<1	31.8	29.5	<1	<1	13.6	8	16 J	
Methanol	20000	---	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	
Methyl Acetate	20000	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1000	
Methyl Tert Butyl Ether	14	---	<1	6.1	<1	<1	<1	29.2	30.5	<1	<1	1.3	<1	<50	
Methylcyclohexane	---	---	1.8	<1	<1	<1	<1	0.62 J	0.46 J	<1	<1	<1	4.3	<50	
n-Butyl Alcohol	2000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
n-Propyl Alcohol	---	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
p-Isopropyltoluene	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	

Table 1
Former Tank Farm Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	MW-3 6/16/2016	MW-5 6/17/2016	MW-7 6/10/2016	MW-9 6/17/2016	MW-13 6/3/2016	MW-14 6/3/2016	MW-14D 6/3/2016	MW-15 6/3/2016	MW-16 6/17/2016	MW-17 6/10/2016	MW-18 6/10/2016	MW-19 6/16/2016	
sec-Butyl Alcohol	24000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
Styrene	100	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Tert-Amyl Alcohol	6.3	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<1000	
Tert-Butyl Alcohol	1400	---	<20	290	<20	<20	<20	715	735	<20	<20	<20	<20	<1000	
Tetrachloroethene	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Tetrahydrofuran	3400	---	<5	<5	<5	<5	<5	5.6	5.5	<5	<5	<5	<5	<250	
Toluene	1000	1000	0.33 J	0.46 J	<1	<1	<1	<1	<1	<1	<1	<1	0.48 J	<50	
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
trans-1,3-Dichloropropene ²	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Trichloroethylene	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
Trichlorofluoromethane	5200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<100	
Vinyl Chloride	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<50	
PAHs by 8270D															
1-Methylnaphthalene	1.1	---	35.9	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	2.6	2	
2-Methylnaphthalene	36	---	33.3	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	2.3	
Acenaphthene	530	670	0.5 J	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Acenaphthylene	---	---	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Anthracene	1800	8300	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Benzo(a)anthracene	0.012	0.038	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Benzo(a)pyrene	0.2	0.038	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Benzo(b)fluoranthene	0.034	0.038	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Benzo(g,h,i)perylene	---	---	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Benzo(k)fluoranthene	0.34	0.038	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Chrysene	3.4	1500	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Dibenzo(a,h)anthracene	0.0034	0.038	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Fluoranthene	800	130	<1.1	<1.1	<1.1	<1	0.71 J	<1	<1.1	<1.1	<1	<1.1	<1.1	1.8	
Fluorene	290	1100	1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	0.77 J	<1.1	
Indeno(1,2,3-cd)pyrene	0.034	0.038	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
Naphthalene	0.17	---	2.19	1.09	<0.11	<0.1	<0.11	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	2.75	
Phenanthrene	---	---	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	0.84 J	
Pyrene	120	830	<1.1	<1.1	<1.1	<1	0.5 J	<1	<1.1	<1.1	<1	<1.1	<1.1	1.1	
VPH / EPH by MADEP EPH Rev 1.1															
C5- C8 Aliphatics (Unadjusted)	1300	---	32.8 J	36.1 J	<50 J	<	<50	53	54.2	<50	<50	<50 J	34.7 J	27.2 J	
C5- C8 Aliphatics (Adjusted)	1300	---	32.5 J	25.9 J	<50 J	<	<50	<50	<50	<50	<50	<50 J	34.5 J	26.3 J	
C9- C12 Aliphatics (Unadjusted)	100	---	342	476	34.5 J	<	31.7 J	136	131	<50	<50	<50	174	197	19500
C9- C12 Aliphatics (Adjusted)	100	---	108	84.6	<50	<	<50	36.1 J	32.2 J	<50	<50	<50	70.7	67.9	65.3
C9- C10 Aromatics (Unadjusted)	33	---	232	55.3	<50	<	<50	99.9	98.1	<50	<50	<50	102	128	100
C9-C18 Aliphatics	100	---	30.7 JB	24.7 JB	48.4 JB	<	<	<110	<100	<110	23.3 JB	78.1 JB	87.4 JB	72.7 J	
C19-C36 Aliphatics	60000	---	34.6 JB	30.4 JB	108 B	<	<	<110	<100	<110	32.5 JB	60.1 JB	57.2 JB	37.3 J	
C11-C22 Aromatics (Unadjusted)	5.5	---	289 B	62 JB	42.4 J	<	<	86.5 J	73.9 J	<110	36.9 JB	172	141	85.3 JB	
C11-C22 Aromatics (Adjusted)	5.5	---	256 B	59.2 JB	42.4 J	<	<	86.5 J	73.8 J	<110	36.9 JB	168	136	78.4 JB	
SVOCs															
1,1-Biphenyl	0.83	---	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
1,2,4,5-Tetrachlorobenzene	1.7	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2	<2	<2.2	<2.2	<2.1	
2,3,4,6-Tetrachlorophenol	240	---	<5.6 J	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4 J	<5.4 J	<5.3 J	
2,4,5-Trichlorophenol	1200	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3	
2,4,6-Trichlorophenol	4.1	14	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3	
2,4-Dichlorophenol	46	77	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2	<2	<2.2	<2.2	<2.1	
2,4-Dimethylphenol	360	380	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	11.4	
2,4-Dinitrophenol	39	69	<11	<11	<11	<10	<11	<10	<11	<11	<10	<11	<11	<11	
2,4-Dinitrotoluene	0.24	1.1	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
2,6-Dinitrotoluene	0.049	---	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1	
2-Chloronaphthalene	750	1000	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2	<2	<2.2	<2.2	<2.1	
2-Chlorophenol	91	81	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3	

Table 1
Former Tank Farm Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	MW-3 6/16/2016	MW-5 6/17/2016	MW-7 6/10/2016	MW-9 6/17/2016	MW-13 6/3/2016	MW-14 6/3/2016	MW-14D 6/3/2016	MW-15 6/3/2016	MW-16 6/17/2016	MW-17 6/10/2016	MW-18 6/10/2016	MW-19 6/16/2016
2-Methylphenol	930	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
2-Nitroaniline	190	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
2-Nitrophenol	---	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4 J	<5.4 J	<5.3
3&4-Methylphenol ²	---	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
3,3-Dichlorobenzidine	0.13	0.21	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
3-Nitroaniline	---	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
4,6-Dinitro-o-cresol	1.5	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
4-Bromophenyl phenyl ether	---	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
4-Chloro-3-methyl phenol	1400	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
4-Chloroaniline	0.37	---	<5.6	<5.6	<5.3	<5	1.8 J	<5.2	<5.5	<5.6	<5.1	7.5	<5.4	<5.3
4-Chlorophenyl phenyl ether	---	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
4-Nitroaniline	3.8	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
4-Nitrophenol	---	---	<11	<11	<11	<10	<11	<10	<11	<11	<10	<11	<11	<11
Acetophenone	1900	---	<2.2	<2.2	<2.1 J	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	3.9
Atrazine	3	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Benzaldehyde	1900	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
bis(2-Chloroethoxy)methane	59	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
bis(2-Chloroethyl)ether	0.014	0.3	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
bis(2-Chloroisopropyl)ether	710	1400	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
bis(2-Ethylhexyl)phthalate	6	12	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Butyl benzyl phthalate	16	1500	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Caprolactam	9900	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Carbazole	---	---	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1
Dibenzofuran	7.9	---	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
Diethyl phthalate	15000	17000	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Dimethyl phthalate	---	270000	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Di-n-butyl phthalate	900	2000	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Di-n-octyl phthalate	200	---	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Hexachlorobenzene	1	0.0028	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1
Hexachlorobutadiene	0.14	4.4	<1.1	<1.1	<1.1	<1	<1.1	<1	<1.1	<1.1	<1	<1.1	<1.1	<1.1
Hexachlorocyclopentadiene	50	40	<11	<11 J	<11	<10 J	<11 J	<10	<11	<11	<10 J	<11	<11	<11
Hexachloroethane	0.33	14	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Isophorone	78	350	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
Nitrobenzene	0.14	17	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
N-Nitroso-di-n-propylamine	0.011	0.05	<2.2	<2.2 J	<2.1 J	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1
N-Nitrosodiphenylamine	12	33	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
Pentachlorophenol	1	1	<5.6	<5.6	<5.3	<5	<5.5	<5.2	<5.5	<5.6	<5.1	<5.4	<5.4	<5.3
Phenol	5800	10000	<2.2	<2.2	<2.1	<2	<2.2	<2.1	<2.2	<2.2	<2	<2.2	<2.2	<2.1

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

² RSL is for 1,3-Dichloropropene. The USEPA has not specifically established a tapwater RSL for trans-1,3-Dichloropropene.

³ The Tapwater screening level applied to 3 & 4 methylphenol is the screening level for 3-methylphenol. This is a conservative level; it is lower than the screening level for 4-methylphenol.

--- No MCL, RSL, or PRWQS is available for this compound.

Detected values are shown in bold. Values which exceed the MCL, RSL, or PRWQS are shown shaded.

B - Compound found in associated method blank

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

Table 2
Brule Area Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	BR-1	BR-2	BR-2D	BR-3	BR-4
			6/8/2016	6/8/2016	6/8/2016	6/8/2016	6/17/2016
VOCs							
1,1,1-Trichloroethane	200	200	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.076	1.7	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5	5	<1	<1	<1	<1	<1
1,1-Dichloroethane	2.8	---	<1	<1	<1	<1	<1
1,1-Dichloroethylene	7	7	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	7	---	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	70	35	<2	<2	<2	<2	<2
1,2,4-Trimethylbenzene	15	---	<1	<1	<1	<1	0.3 J
1,2-Dibromo-3-chloropropane	0.2	---	<5	<5	<5	<5	<5
1,2-Dibromoethane	0.05	---	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	600	420	1	0.74 J	0.84 J	<1	<1
1,2-Dichloroethane	5	3.8	<1	<1	<1	<1	<1
1,2-Dichloropropane	5	5	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	---	320	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75	63	0.69 J	<1	0.52 J	<1	<1
1,4-Dioxane	0.46	---	123	14.7	15.8	42.2	1.49
2-Butanone (MEK)	5600	---	<5	<5	<5	<5	<5
2-Hexanone	38	---	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	6300	---	<5	<5	<5	<5	<5
Acetone	14000	---	<25	<25	<25	<25	<25
Benzene	5	5	<1	<1	<1	<1	<1
Benzyl Chloride	0.089	---	<2	<2	<2	<2	<2
Bromochloromethane	83	---	<1	<1	<1	<1	<1
Bromodichloromethane	80	5.5	<1	<1	<1	<1	<1
Bromoform	80	43	<1	<1	<1	<1	<1
Bromomethane	7.5	47	<2	<2	<2	<2	<2
Carbon Disulfide	810	---	<2	<2	<2	<2	<2
Carbon Tetrachloride	5	2.3	<1	<1	<1	<1	<1
Chlorobenzene	100	100	0.87 J	<1	0.39 J	0.42 J	<1
Chloroethane	21000	---	<2	<2	<2	<2	<2
Chloroform	80	57	<1	<1	<1	<1	<1
Chloromethane	190	---	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	70	---	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	---	---	<1	<1	<1	<1	<1
Cyclohexane	13000	---	1.4	<1	0.37 J	<1	<1
Dibromochloromethane	80	4	<1	<1	<1	<1	<1
Dichlorodifluoromethane	200	---	<2	<2	<2	<2	<2
Ethanol	---	---	<100	<100	<100	<100	<100
Ethylbenzene	700	530	<1	<1	<1	<1	<1
Freon 113	55000	---	<1	<1	<1	<1	<1
Isobutyl Alcohol	5900	---	<100	<100	<100	<100	<100
Isopropyl Alcohol	410	---	<100	<100	<100	<100	<100
Isopropylbenzene	450	---	2	<1	<1	3.8	<1
Methanol	20000	---	<200	<200	<200	<200	<200
Methyl Acetate	20000	---	<20	<20	<20	<20	<20
Methyl Tert Butyl Ether	14	---	7.3	3.8	3.5	0.95 J	<1
Methylcyclohexane	---	---	<1	<1	<1	<1	<1
Methylene Chloride	5	46	<5	<5	<5	<5	<5
n-Butyl Alcohol	2000	---	<100	<100	<100	<100	<100
n-Propyl Alcohol	---	---	<100	<100	<100	<100	<100
p-Isopropyltoluene	---	---	<1	<1	<1	<1	<1
sec-Butyl Alcohol	24000	---	<100	<100	<100	<100	<100
Styrene	100	---	<1	<1	<1	<1	<1
Tert-Amyl Alcohol	6.3	---	<20	<20	<20	<20	<20
Tert-Butyl Alcohol	1400	---	96.7	<20	<20	<20	<20
Tetrachloroethene	5	5	<1	<1	<1	<1	<1
Tetrahydrofuran	3400	---	<5	<5	<5	<5	<5
Toluene	1000	1000	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	100	100	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene ²	0.47	3.4	<1	<1	<1	<1	<1

Table 2
Brule Area Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	BR-1	BR-2	BR-2D	BR-3	BR-4
			6/8/2016	6/8/2016	6/8/2016	6/8/2016	6/17/2016
Trichloroethene	5	5	<1	<1	<1	<1	<1
Trichlorofluoromethane	5200	---	<2	<2	<2	<2	<2
Vinyl Chloride	2	0.25	<1	<1	<1	<1	<1
Xylene (total)	10000	---	<3	<3	<3	<3	<3
PAHs by 8270D							
1-Methylnaphthalene	1.1	---	<1	<1.1	<1	<1.1	<1
2-Methylnaphthalene	36	---	<1	<1.1	<1	<1.1	<1
Acenaphthene	530	670	<1	<1.1	<1	<1.1	<1
Acenaphthylene	---	---	<1	<1.1	<1	<1.1	<1
Anthracene	1800	8300	<1	<1.1	<1	<1.1	<1
Benzo(a)anthracene	0.012	0.038	<1	<1.1	<1	<1.1	<1
Benzo(a)pyrene	0.2	0.038	<1	<1.1	<1	<1.1	<1
Benzo(b)fluoranthene	0.034	0.038	<1	<1.1	<1	<1.1	<1
Benzo(g,h,i)perylene	---	---	<1	<1.1	<1	<1.1	<1
Benzo(k)fluoranthene	0.34	0.038	<1	<1.1	<1	<1.1	<1
Chrysene	3.4	1500	<1	<1.1	<1	<1.1	<1
Dibenzo(a,h)anthracene	0.0034	0.038	<1	<1.1	<1	<1.1	<1
Fluoranthene	800	130	0.45 J	<1.1	0.81 J	<1.1	<1
Fluorene	290	1100	<1	<1.1	<1	<1.1	<1
Indeno(1,2,3-cd)pyrene	0.034	0.038	<1	<1.1	<1	<1.1	<1
Naphthalene	0.17	---	0.454	<0.11	<0.1	<0.11	<0.1
Phenanthrene	---	---	<1	<1.1	<1	<1.1	<1
Pyrene	120	830	<1	<1.1	0.42 J	<1.1	<1
VPH / EPH by MADEP EPH Rev 1.1							
C5- C8 Aliphatics (Unadjusted)	1300	---	27.7 J	<50	<50	<50	<50
C5- C8 Aliphatics (Adjusted)	1300	---	<50	<50	<50	<50	<50
C9- C12 Aliphatics (Unadjusted)	100	---	<50	31.6 J	33.7 J	<50	37.2 J
C9- C12 Aliphatics (Adjusted)	100	---	<50	<50	<50	<50	<50
C9- C10 Aromatics (Unadjusted)	33	---	<50	25.9 J	<50	<50	30.6 J
C9-C18 Aliphatics	100	---	<100	<110	<100	<110	39.7 JB
C19-C36 Aliphatics	60000	---	90.3 J	<110	106	<110	51.9 JB
C11-C22 Aromatics (Unadjusted)	5.5	---	<100	<110	77.1 J	<110	44.3 JB
C11-C22 Aromatics (Adjusted)	5.5	---	<100	<110	77.1 J	<110	44.3 JB
SVOCs							
1,1'-Biphenyl	0.83	---	<1	<1.1	<1	<1.1	<1
1,2,4,5-Tetrachlorobenzene	1.7	---	<2	<2.1	<2.1	<2.1	<2
2,3,4,6-Tetrachlorophenol	240	---	<5.1 J	<5.3 J	<5.2 J	<5.3	<5
2,4,5-Trichlorophenol	1200	---	<5.1	<5.3	<5.2	<5.3	<5
2,4,6-Trichlorophenol	4.1	14	<5.1	<5.3	<5.2	<5.3	<5
2,4-Dichlorophenol	46	77	<2	<2.1	<2.1	<2.1	<2
2,4-Dimethylphenol	360	380	<5.1	<5.3	<5.2	<5.3	<5
2,4-Dinitrophenol	39	69	<10 R	<11	<10	<11	<10
2,4-Dinitrotoluene	0.24	1.1	<1 J	<1.1 J	<1 J	<1.1	<1
2,6-Dinitrotoluene	0.049	---	<1	<1.1	<1	<1.1	<1
2-Chloronaphthalene	750	1000	<2	<2.1	<2.1	<2.1	<2
2-Chlorophenol	91	81	<5.1	<5.3	<5.2	<5.3	<5
2-Methylphenol	930	---	<2	<2.1	<2.1	<2.1	<2
2-Nitroaniline	190	---	<5.1	<5.3	<5.2	<5.3	<5
2-Nitrophenol	---	---	<5.1 J	<5.3 J	<5.2	<5.3	<5
3&4-Methylphenol ³	---	---	<2	<2.1	<2.1	<2.1	<2
3,3'-Dichlorobenzidine	0.13	0.21	<2	<2.1	<2.1	<2.1	<2
3-Nitroaniline	---	---	<5.1	<5.3	<5.2	<5.3	<5
4,6-Dinitro-o-cresol	1.5	---	<5.1 R	<5.3	<5.2	<5.3	<5
4-Bromophenyl phenyl ether	---	---	<2	<2.1	<2.1	<2.1	<2
4-Chloro-3-methyl phenol	1400	---	<5.1	<5.3	<5.2	<5.3	<5
4-Chloroaniline	0.37	---	1 J	<5.3	<5.2	<5.3	<5
4-Chlorophenyl phenyl ether	---	---	<2	<2.1	<2.1	<2.1	<2
4-Nitroaniline	3.8	---	<5.1	<5.3	<5.2	<5.3	<5
4-Nitrophenol	---	---	<10	<11	<10 J	<11	<10
Acetophenone	1900	---	<2	<2.1	<2.1 J	<2.1	<2
Atrazine	3	---	<2	<2.1	<2.1	<2.1	<2

Table 2
Brule Area Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	BR-1	BR-2	BR-2D	BR-3	BR-4
			6/8/2016	6/8/2016	6/8/2016	6/8/2016	6/17/2016
Benzaldehyde	1900	---	<5.1	<5.3	<5.2	<5.3	<5
bis(2-Chloroethoxy)methane	59	---	<2	<2.1	<2.1	<2.1	<2
bis(2-Chloroethyl)ether	0.014	0.3	<2	<2.1	<2.1	<2.1	<2
bis(2-Chloroisopropyl)ether	710	1400	<2	<2.1	<2.1	<2.1	<2
bis(2-Ethylhexyl)phthalate	6	12	<2	<2.1	<2.1	<2.1	<2
Butyl benzyl phthalate	16	1500	<2	<2.1	<2.1	<2.1	<2
Caprolactam	9900	---	<2	<2.1	<2.1	<2.1	<2
Carbazole	---	---	<1	<1.1	<1	<1.1	<1
Dibenzofuran	7.9	---	<5.1	<5.3	<5.2	<5.3	<5
Diethyl phthalate	15000	17000	<2	<2.1	<2.1	<2.1	<2
Dimethyl phthalate	---	270000	<2	<2.1	<2.1	<2.1	<2
Di-n-butyl phthalate	900	2000	<2	<2.1	<2.1	<2.1	<2
Di-n-octyl phthalate	200	---	<2	<2.1	<2.1	<2.1	<2
Hexachlorobenzene	1	0.0028	<1	<1.1	<1	<1.1	<1
Hexachlorobutadiene	0.14	4.4	<1	<1.1	<1	<1.1	<1
Hexachlorocyclopentadiene	50	40	<10	<11	<10	<11	<10 J
Hexachloroethane	0.33	14	<2	<2.1	<2.1	<2.1	<2
Isophorone	78	350	<2	<2.1	<2.1	<2.1	<2
Nitrobenzene	0.14	17	<2	<2.1	<2.1	<2.1	<2
N-Nitroso-di-n-propylamine	0.011	0.05	<2	<2.1	<2.1	<2.1 J	<2
N-Nitrosodiphenylamine	12	33	<5.1	<5.3	<5.2	<5.3	<5
Pentachlorophenol	1	1	<5.1	<5.3	<5.2	<5.3	<5
Phenol	5800	10000	<2	<2.1	<2.1	<2.1	<2

¹ April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

² RSL is for 1,3-Dichloropropene. The USEPA has not specifically established a tapwater RSL for trans-1,3-Dichloropropene.

³ The Tapwater screening level applied to 3 & 4 methylphenol is the screening level for 3-methylphenol. This is a conservative level; it is lower than the screening level for 4-methylphenol.

--- No MCL, RSL, or PRWQS is available for this compound.

Detected values are shown in bold. Values which exceed the MCL, RSL, or PRWQS are shown shaded.

J - Indicates an estimated value

JB - Value is estimated due to presence of compound in method blank.

R - Sample result is not usable because it did not meet required quality assurance/quality control limits.

Table 3
Building 5 Area Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	A-1R4	A-2R2	D-1R	E-1R	G-1R3	MW-11	S-28	S-29R	S-30	S-31R2	S-32	S-33	S-34	S-35	S-36	S-36D	S-37	S-38	UP-1	UP-2	
			6/6/2016	6/6/2016	6/15/2016	6/15/2016	6/15/2016	6/9/2016	6/9/2016	6/7/2016	6/7/2016	6/7/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/9/2016	6/6/2016	6/6/2016	
Building 5 Area COCs																							
Benzene	5	5	7.1	<1	<1	0.28 J	1080	<1	<1	0.25 J	0.41 J	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	700	530	164	1.3	<1	11.7	22100	<1	<1	<1	<1	1360	49600	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	1000	1000	1.8 J	<1	<1	<1	68 J	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (total)	10000	---	604.9	1.5 J	<3	39.5	69300	<3	<3	<3	<3	<60	86210	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Acetone	14000	---	84.9 J	<25	<25	<25	<2500	<25	<25	<25	<25	<25000	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
4-Methyl-2-pentanone (MIBK)	6300	---	33.8	<5	<5	<5	<500	<5	<5	<5	<5	<100	<5000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Isopropyl Alcohol	410	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methanol	20000	---	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Other VOCs																							
1,1,1-Trichloroethane	200	200	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.076	1.7	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5	5	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	2.8	---	<5	<1	<1	<1	1180	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	7	7	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	7	---	<10	<2	<2	<2	<200	<2	<2	<2	<2	<40	<2000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	70	35	<10	<2	<2	<2	<200	<2	<2	<2	<2	<40	<2000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-Trimethylbenzene	15	---	1.6 J	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.2	---	<25	<5	<5	<5	<500	<5	<5	<5	<5	<100	<5000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	0.05	---	<10	<2	<2	<2	<200	<2	<2	<2	<2	<40	<2000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	600	420	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5	3.8	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	5	5	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	---	320	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75	63	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dioxane	0.46	---	64.4	0.289	2850	52.4	0.259	289	330	11.7	1370	40.1	3.18	24.3	16.7	307	2.86 JB	3.46 JB	25.2	210	1.83	514	
2-Butanone (MEK)	5600	---	<25	<5	<5	<5	<500	<5	<5	<5	<5	<100	<5000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	38	---	<50	<10	<10	<10	<1000	<10	<10	<10	<10	<200	<10000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzyl Chloride	0.089	---	<10	<2	<2	<2	<200	<2	<2	<2	<2	<40	<2000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromochloromethane	83	---	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20	<1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	80	5.5	<5	<1	<1	<1	<100	<1	<1	<1	<1	<20											

Table 3
Building 5 Area Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	A-1R4	A-2R2	D-1R	E-1R	G-1R3	MW-11	S-28	S-29R	S-30	S-31R2	S-32	S-33	S-34	S-35	S-36	S-36D	S-37	S-38	UP-1	UP-2	
			6/6/2016	6/6/2016	6/15/2016	6/15/2016	6/15/2016	6/9/2016	6/9/2016	6/7/2016	6/7/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/9/2016	6/6/2016	6/6/2016	
PAHs																							
1-Methylnaphthalene	1.1	---	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
2-Methylnaphthalene	36	---	0.53 J	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Acenaphthene	530	670	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Acenaphthylene	---	---	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Anthracene	1800	8300	26.6	<1	0.66 J	33.5	<1	<1	<1	13.4	<1	2.8	<1	1.4	<1.1	<1	<1	<1	<1	<1	1.9	<1.1	
Benzo(a)anthracene	0.012	0.038	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Benzo(a)pyrene	0.2	0.038	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Benzo(b)fluoranthene	0.034	0.038	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Benzo(g,h,i)perylene	---	---	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Benzo(k)fluoranthene	0.34	0.038	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Chrysene	3.4	1500	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Dibenzo(a,h)anthracene	0.0034	0.038	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Fluoranthene	800	130	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Fluorene	290	1100	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Indeno(1,2,3-cd)pyrene	0.034	0.038	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Naphthalene	0.17	---	0.519	<0.1	<0.11	0.294	<0.1	<0.1	<0.1	<0.1	<0.11	0.372	<0.11	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	0.108	<0.1	<0.11	
Phenanthrene	---	---	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
Pyrene	120	830	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1	<1.1	
VPH / EPH by MADEP EPH Rev 1.1																							
C5-C8 Aliphatics (Unadjusted)	1300	---	1100	25.2 J	<50	36.4 J	167	<50	<50	<50	38.1 J	35.9 J	119 J	30.9 J	<50	<50 J	<50 J	<50 J	<50	<50	<50	<50	
C5-C8 Aliphatics (Adjusted)	1300	---	1100	<50	<50	27.7 J	67.1	<50	<50	<50	32.4 J	<50	50.5 J	<50	<50	<50 J	<50 J	<50 J	<50	<50	<50	<50	
C9-C12 Aliphatics (Unadjusted)	100	---	869	<50	<50	55.4	63100	<50	<50	<50	40.7 J	<50	1420	108000	72.3	<50	<50	<50	<50	<50	<50	62.3	
C9-C12 Aliphatics (Adjusted)	100	---	135	<50	<50	55	55	<50	<50	<50	113	<50	11200	<50	<50	<50	<50	<50	<50	<50	<50	<50	
C9-C10 Aromatics (Unadjusted)	33	---	60.2	<50	<50	50	112	<50	<50	<50	39.3 J	463	50	<50	<50	<50	<50	<50	<50	<50	43.1 J	<50	
C9-C18 Aliphatics	100	---	<110	<100	20.8 J	22.7 J	25.8 J	<100	<110	<100	<110	<110	185 B	20.6 J	22.7 J	27.3 JB	25.8 JB	29.3 JB	22.8 JB	<100	<100		
C19-C36 Aliphatics	60000	---	<110	<100	33.7 J	46.6 J	96.7 J	86.7 J	85.2 J	<100	<110	<110	59.7 JB	32.9 J	40.9 J	48.5 JB	49.3 JB	51.4 JB	40.6 JB	79.1 J	<100		
C11-C22 Aromatics (Unadjusted)	5.5	---	<110	<100	<110	60.6 JB	36.4 JB	<100	<110	<100	<110	<110	49.5 J	33.2 JB	34.2 JB	<110	35.2 J	31.2 J	<100	<100	<100		
C11-C22 Aromatics (Adjusted)	5.5	---	<110	<100	<110	32.4 JB	36.4 JB	<100	<110	<100	<110	<110	49.5 J	32.6 JB	34.2 JB	<110	35.2 J	31.2 J	<10				

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Building 5 Area Groundwater Analytical Results, ug/L

Parameter	May 2016 MCL or Tapwater RSL	April 2016 PRWQS ¹	A-1R4	A-2R2	D-1R	E-1R	G-1R3	MW-11	S-28	S-29R	S-30	S-31R2	S-32	S-33	S-34	S-35	S-36	S-36D	S-37	S-38	UP-1	UP-2
			6/6/2016	6/6/2016	6/15/2016	6/15/2016	6/15/2016	6/9/2016	6/9/2016	6/7/2016	6/7/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/13/2016	6/9/2016	6/6/2016	6/6/2016
Diethyl phthalate	15000	17000	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2	<2.1	<2.1	<2.1
Dimethyl phthalate	---	270000	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2	<2.1	<2.1	<2.1
Di-n-butyl phthalate	900	2000	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2	<2.1	<2.1	<2.1
Di-n-octyl phthalate	200	---	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2	<2	<2	<2	<2	<2.1	<2.1	<2.1
Hexachlorobenzene	1	0.0028	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1.1
Hexachlorobutadiene	0.14	4.4	<1.1	<1	<1.1	<1.1	<1	<1	<1	<1	<1.1	<1	<1.1	<1.1	<1.1	<1	<1	<1	<1	<1	<1	<1.1
Hexachlorocyclopentadiene	50	40	<11	<10	<11	<11	<10	<10	<10	<10	<11	<10	<11	<11	<11	<10	<10	<10	<10	<10	<10	<11
Hexachloroethane	0.33	14	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2	<2.1	<2.1	<2.1
Isophorone	78	350	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2	<2.1	<2.1	<2.1
Nitrobenzene	0.14	17	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2	<2.1	<2.1	<2.1
N-Nitroso-di-n-propylamine	0.011	0.05	<2.1 J	<2.1	<2.2	<2.2	<2.1 J	<2	<2	<2.1	<2.2	<2	<2.2 J	<2.2 J	<2	<2	<2	<2	<2.1	<2.1	<2.1	<2.1
N-Nitrosodiphenylamine	12	33	<5.3	<5.2	<5.6	<5.5	<5.2	<5	<5.1	<5	<5.2	<5.6	<5	<5.6	<5.5	<5	<5	<5	<5.2	<5.2	<5.3	
Pentachlorophenol	1	1	<5.3	<5.2	<5.6	<5.5	<5.2	<5	<5.1	<5	<5.2	<5.6	<5	<5.6	<5.5	<5	<5	<5	<5.2	<5.2	<5.3	
Phenol	5800	10000	<2.1	<2.1	<2.2	<2.2	<2.1	<2	<2	<2.1	<2.2	<2	<2.2	<2.2	<2.2	<2	<2	<2	<2.1	<2.1	<2.1	
Organochlorine Pesticides																						
4,4'-DDD	0.032	---	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
4,4'-DDE	0.046	---	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
4,4'-DDT	0.23	0.0022	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
Aldrin	0.00092	0.00049	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
alpha-BHC	0.0072	0.026	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
alpha-Chlordane ⁴	---	0.008	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
beta-BHC	0.025	0.091	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
delta-BHC	---	---	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
Dieldrin	0.0018	0.00052	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	
Endosulfan sulfate	---	62	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	
Endosulfan-I ⁵	---	---	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	
Endosulfan-II ⁶	---	---	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011	<0.01	<0.01	<0.01	
Endrin	2	0.059	<0.01	<0.01	<0.011	<0.011	<0.01	<0.01	<0.01	<0.011	<0.052	<0.011	<0.011	<0.011	<0.011	<0.01	<0.01	<0.011</				

Table 4
Building 7 Indoor Air Sample Results- June 2016

Compound	Industrial Indoor Air Screening Level ($\mu\text{g}/\text{m}^3$)	Sample ID/Sample Date							
		B7IA-1	B7IA-1D	B7IA-2	B7IA-3	B7IA-4	B7IA-5	B7IA-6	B7AA
		6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016
		Indoor Air							
Analytical Result ($\mu\text{g}/\text{m}^3$)									
1,1,1-Trichloroethane	22000	<0.88	<0.91	<0.87	<1	<0.87	<0.92	<0.83	<1
1,1,2,2-Tetrachloroethane	0.21	<1.1	<1.1	<1.1	<1.3	<1.1	<1.2	<1	<1.3
1,1,2-Trichloroethane	0.77	<0.88	<0.91	<0.87	<1	<0.87	<0.92	<0.83	<1
1,1-Dichloroethane	7.7	<0.65	<0.68	<0.65	<0.76	<0.64	<0.68	<0.62	<0.76
1,1-Dichloroethene	880	<0.64	<0.66	<0.63	<0.74	<0.63	<0.67	<0.61	<0.74
1,2,4-Trichlorobenzene	8.8	<6	<6.2	<5.9	<6.9	<5.9	<6.3	<5.7	<7
1,2,4-Trimethylbenzene	31	0.25 J	0.25 J	0.27 J	0.62 J	0.22 J	0.2 J	1.2	<0.92
1,2-Dibromoethane (EDB)	0.02	<1.2	<1.3	<1.2	<1.4	<1.2	<1.3	<1.2	<1.4
1,2-Dichlorobenzene	880	<0.97	<1	<0.96	<1.1	<0.96	<1	<0.92	<1.1
1,2-Dichloroethane	0.47	<0.65	<0.68	<0.65	0.49 J	<0.64	<0.68	<0.62	<0.76
1,2-Dichloropropane	1.2	<0.74	<0.77	<0.74	<0.86	<0.73	<0.78	<0.71	<0.87
1,3,5-Trimethylbenzene	---	<0.79	<0.82	<0.79	0.27 J	<0.78	<0.83	0.32 J	<0.92
1,3-Butadiene	0.41	<0.36	<0.37	0.15 J	<0.41	<0.35	<0.37	<0.34	<0.42
1,3-Dichlorobenzene	---	<0.97	<1	<0.96	<1.1	<0.96	<1	<0.92	<1.1
1,4-Dichlorobenzene	1.1	<0.97	<1	<0.96	<1.1	<0.96	<1	<0.92	<1.1
1,4-Dioxane	2.5	<0.58	<0.6	0.71	<0.67	<0.57	<0.61	<0.55	0.52 J
2,2,4-Trimethylpentane	---	<3.8	<3.9	<3.7	<4.4	<3.7	<3.9	<3.6	<4.4
2-Butanone (Methyl Ethyl Ketone)	22000	7.9	2.5	7.1	3	5	5.1	6	2.7 J
2-Hexanone	130	1.5 J	0.4 J	1.4 J	<3.8	0.66 J	1 J	0.62 J	0.53 J
3-Chloropropene	2	<2.5	<2.6	<2.5	<2.9	<2.5	<2.6	<2.4	<2.9
4-Ethyltoluene	---	0.18 J	0.25 J	0.17 J	0.5 J	0.18 J	<0.83	0.66 J	<0.92
Acetone	140000	34 J	15 J	28	27	22	21	14	14
alpha-Chlorotoluene	0.25	<0.83	<0.86	<0.83	<0.97	<0.82	<0.87	<0.79	<0.97
Benzene	1.6	0.29 J	0.31 J	0.27 J	0.3 J	0.26 J	0.29 J	0.35 J	0.25 J
Bromodichloromethane	0.33	<1.1	<1.1	<1.1	<1.2	<1.1	<1.1	<1	<1.2
Bromoform	11	<1.7	<1.7	<1.6	<1.9	<1.6	<1.7	<1.6	<1.9
Bromomethane	22	<3.1	<3.2	<3.1	<3.6	<3.1	<3.3	<3	<3.6
Carbon Disulfide	3100	<2.5	0.22 J	0.22 J	0.39 J	<2.5	0.3 J	0.27 J	<2.9
Carbon Tetrachloride	2	0.44 J	0.37 J	0.52 J	0.53 J	0.5 J	0.46 J	0.5 J	0.46 J
Chlorobenzene	220	<0.74	<0.77	<0.74	<0.86	<0.73	<0.78	<0.7	<0.86
Chloroethane	44000	<2.1	<2.2	<2.1	<2.5	<2.1	<2.2	<2	<2.5
Chloroform	0.53	<0.79	<0.82	0.19 J	<0.91	<0.78	0.32 J	0.28 J	<0.92
Chloromethane	390	2.2	2.3	1.8	2.2	2.2	2.1	2	1.9 J
cis-1,2-Dichloroethene	---	<0.64	<0.66	<0.63	<0.74	<0.63	<0.67	<0.61	<0.74
cis-1,3-Dichloropropene	---	<0.73	<0.76	<0.73	<0.85	<0.72	<0.77	<0.69	<0.85
Cumene	1800	<0.79	<0.82	<0.79	<0.92	<0.78	<0.83	<0.75	<0.92
Cyclohexane	26000	<0.55	0.18 J	<0.55	0.48 J	0.13 J	<0.58	0.43 J	<0.65
Dibromochloromethane	---	<1.4	<1.4	<1.4	<1.6	<1.4	<1.4	<1.3	<1.6
Ethanol	---	15 J	11 J	24	48	5.8	9.5	32	1.8
Ethylbenzene	4.9	0.22 J	0.23 J	<0.69	0.32 J	<0.69	<0.73	0.48 J	<0.82
Freon 11	---	44	42	5.8	6.1	57	18	9.8	1.6
Freon 113	130000	0.49 J	0.55 J	0.57 J	0.59 J	0.77 J	1 J	0.84 J	0.93 J
Freon 114	---	<1.1	<1.2	<1.1	<1.3	<1.1	<1.2	<1.1	<1.3
Freon 12	440	2.4	2.8	3	2.4	3	3	3	2.9
Heptane	---	0.7	0.41 J	<0.66	0.76 J	0.59 J	0.45 J	0.77	<0.77
Hexachlorobutadiene	0.56	<8.6	<8.9	<8.5	<10	<8.5	<9	<8.2	<10
Hexane	3100	0.36 J	0.4 J	0.28 J	0.46 J	0.4 J	0.28 J	0.59	0.25 J
Isopropyl Alcohol	880	6.3	6.1	14	82	5.4	7.8	12	1.6 J
Methanol	88000	<210	<220	<210	<240	<210	<220	<200	<250
Methyl Isobutyl Ketone	13000	0.5 J	0.16 J	0.43 J	0.3 J	0.29 J	0.34 J	0.31 J	0.22 J
Methyl tert-butyl ether	47	<0.58	<0.6	<0.58	<0.67	<0.57	<0.61	<0.55	<0.68
Methylene Chloride	1200	0.66 J	1.6	0.74 J	0.92 J	0.86 J	0.94 J	1.9	0.83 J
Naphthalene (TO-15)	0.36	0.15 J	0.1 J	0.17 J	0.31 J	0.12 J	0.45 J	0.83 J	0.33 J
Naphthalene (TO-17)	0.36	0.12	0.12	0.14	0.24	0.09	0.31	0.23	0.032 J
Propylbenzene	4400	<0.79	<0.82	<0.79	<0.92	<0.78	<0.83	0.14 J	<0.92
Styrene	4400	0.14 J	0.28 J	0.19 J	0.46 J	0.18 J	0.15 J	0.78	<0.8
Tetrachloroethene	47	<1.1	<1.1	<1.1	<1.3	<1.1	<1.1	<1	<1.3
Tetrahydrofuran	8800	<2.4	<2.5	<2.4	<2.8	<2.3	<2.5	<2.2	<2.8
Toluene	22000	8.4	8.5	0.82	1.4	2.1	0.95	3.7	0.56 J
trans-1,2-Dichloroethene	---	<0.64	<0.66	<0.63	<0.74	<0.63	<0.67	<0.61	<0.74
trans-1,3-Dichloropropene	---	<0.73	<0.76	<0.73	<0.85	<0.72	<0.77	<0.69	<0.85

Table 4
Building 7 Indoor Air Sample Results- June 2016

Compound	Industrial Indoor Air Screening Level ($\mu\text{g}/\text{m}^3$)	Sample ID/Sample Date							
		B7IA-1	B7IA-1D	B7IA-2	B7IA-3	B7IA-4	B7IA-5	B7IA-6	B7AA
		6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016	6/11/2016
		Indoor Air							
Analytical Result ($\mu\text{g}/\text{m}^3$)									
Trichloroethene	3	<0.86	<0.9	<0.86	<1	<0.85	<0.91	<0.82	<1
Vinyl Chloride	2.8	<0.41	<0.43	<0.41	<0.48	<0.41	<0.43	<0.39	<0.48
Total Xylenes	440	0.74 J	0.93 J	0.42 J	1.03 J	0.68 J	0.33 J	1.82 J	0.28 J
Methane (%)	0.5	0.0002	0.00019	0.00015 J	0.00019	0.0002	0.00018	0.00016	0.00018 J

Notes:

Detected results are shown in bold. Values which exceed the screening level are shown shaded.

---: The USEPA has not developed a vapor intrusion screening level for this parameter.

J: Indicates an estimated value

E: Indicates detected concentration exceeded the calibration range of the instrument

UJ: Indicates the analyte was not detected above the reporting limit, however, the reporting limit is approximate

Table 5
Building 7 Sub-Slab Sample Results- June 2016

Compound	Industrial Sub-Slab Screening Level ($\mu\text{g}/\text{m}^3$)	Sample ID/Sample Date						
		B7SS-1	B7SS-1D	B7SS-2	B7SS-3	B7SS-4	B7SS-5	B7SS-6
		6/12/2016	6/12/2016	6/12/2016	6/12/2016	6/12/2016	6/12/2016	6/12/2016
Analytical Result ($\mu\text{g}/\text{m}^3$)								
1,1,1-Trichloroethane	730000	<6.3	<6.8	<6.3	<6	<6.6	<6.2	<6.6
1,1,2,2-Tetrachloroethane	7	<8	<8.5	<8	<7.6	<8.3	<7.9	<8.3
1,1,2-Trichloroethane	26	<6.3	<6.8	<6.3	<6	<6.6	<6.2	<6.6
1,1-Dichloroethane	260	<4.7	<5	<4.7	<4.4	<4.9	<4.6	<4.9
1,1-Dichloroethene	29000	<4.6	<4.9	<4.6	<4.4	<4.8	<4.5	<4.8
1,2,4-Trichlorobenzene	290	<34	<37	<34	<33	<36	<34	<36
1,2,4-Trimethylbenzene	1000	<5.7	<6.1	<5.7	<5.4	<5.9	3.1 J	<5.9
1,2-Dibromoethane (EDB)	0.68	<8.9	<9.5	<8.9	<8.4	<9.2	<8.8	<9.3
1,2-Dichlorobenzene	29000	<7	<7.4	<7	<6.6	<7.2	<6.9	<7.3
1,2-Dichloroethane	16	<4.7	<5	<4.7	<4.4	<4.9	<4.6	<4.9
1,2-Dichloropropane	41	<5.4	<5.7	<5.4	<5.1	<5.6	<5.3	<5.6
1,3,5-Trimethylbenzene	---	<5.7	<6.1	<5.7	<5.4	<5.9	<5.6	<5.9
1,3-Butadiene	14	<2.6	<2.7	<2.6	<2.4	<2.7	<2.5	<2.7
1,3-Dichlorobenzene	---	<7	<7.4	<7	<6.6	<7.2	<6.9	<7.3
1,4-Dichlorobenzene	37	<7	<7.4	<7	<6.6	<7.2	<6.9	<7.3
1,4-Dioxane	82	<17	<18	<17	<16	<17	<16	<17
2,2,4-Trimethylpentane	---	<5.4	<5.8	<5.4	0.78 J	<5.6	<5.3	<5.6
2-Butanone (Methyl Ethyl Ketone)	730000	8.6 J	6.7 J	17	8.8 J	9.2 J	5.8 J	7.5 J
2-Hexanone	4400	0.91 J	<20	1.4 J	1.3 J	1.2 J	1.3 J	1.4 J
3-Chloropropene	68	<14	<16	<14	<14	<15	<14	<15
4-Ethyltoluene	---	<5.7	<6.1	<5.7	0.81 J	<5.9	3 J	<5.9
Acetone	4500000	130	31	100	31	110	20 J	60
alpha-Chlorotoluene	8.3	<6	<6.4	<6	<5.7	<6.2	<5.9	<6.3
Benzene	52	<3.7	<4	2 J	0.69 J	<3.8	<3.6	<3.9
Bromodichloromethane	11	<7.8	<8.3	<7.8	<7.4	<8.1	<7.7	<8.1
Bromoform	370	<12	<13	<12	<11	<12	<12	<12
Bromomethane	730	<45	<48	<45	<43	<47	<44	<47
Carbon Disulfide	100000	13 J	<15	9.7 J	18	21	0.58 J	19
Carbon Tetrachloride	68	<7.3	<7.8	<7.3	<6.9	<7.6	<7.2	<7.6
Chlorobenzene	7300	<5.3	<5.7	<5.3	<5.1	<5.5	<5.3	<5.6
Chloroethane	1500000	<12	<13	<12	<12	<13	<12	<13
Chloroform	18	<5.7	<6	<5.7	<5.4	<5.9	<5.6	4.6 J
Chloromethane	13000	<24 UJJ	<26 UJJ	<24 UJJ	<23 UJJ	<25 UJJ	<24 UJJ	<25 UJJ
cis-1,2-Dichloroethene	---	<4.6	<4.9	<4.6	<4.4	<4.8	<4.5	<4.8
cis-1,3-Dichloropropene	---	<5.3	<5.6	<5.3	<5	<5.5	<5.2	<5.5
Cumene	58000	<5.7	4.4 J	<5.7	<5.4	<5.9	<5.6	<5.9
Cyclohexane	880000	<4	<4.3	<4	<3.8	<4.1	<3.9	<4.2
Dibromochloromethane	---	<9.9	<10	<9.9	<9.4	<10	<9.8	<10
Ethanol	---	10 J 0 J	<9.3 UJJ	60 J 0 J	15 J 0 J	40 J 0 J	<8.6 UJJ	<9.1 UJJ
Ethylbenzene	160	<5	<5.4	2.7 J	1.7 J	<5.2	1.5 J	<5.2
Freon 11	---	17	16	21	6.4	23	16	1.9 J
Freon 113	4400000	<8.9	<9.5	<8.9	<8.4	<9.2	<8.8	<9.3
Freon 114	---	<8.1	<8.7	<8.1	<7.7	<8.4	<8	<8.4
Freon 12	15000	<5.7	<6.1	<5.7	<5.4	<6	1.6 J	<6
Heptane	---	0.99 J	1.1 J	14	8.5	9.4	8.6	5
Hexachlorobutadiene	19	<49	<53	<49	<47	<51	<49	<52
Hexane	100000	<4.1	<4.4	<4.1	<3.9	1.2 J	<4	<4.3
Isopropyl Alcohol	29000	4.6 J	2.3 J	11	15	6.2 J	2.8 J	12
Methanol	2900000	<300	<330	<300	<290	<320	<300	<320
Methyl Isobutyl Ketone	440000	<4.8	<5.1	<4.8	<4.5	1.2 J	<4.7	<5
Methyl tert-butyl ether	1600	<4.2	<4.5	<4.2	<4	<4.3	<4.1	<4.4
Methylene Chloride	41000	<40	<43	<40	<38	<42	<40	1.4 J
Naphthalene (TO-15)	12	<12	<13	<12	<12	<13	<12	<13
Naphthalene (TO-17)	12	<2.5	<2.5	1.2 J	<2.5	<2.5	2 J	<2.5

Table 5
Building 7 Sub-Slab Sample Results- June 2016

Compound	Industrial Sub-Slab Screening Level ($\mu\text{g}/\text{m}^3$)	Sample ID/Sample Date						
		B7SS-1	B7SS-1D	B7SS-2	B7SS-3	B7SS-4	B7SS-5	B7SS-6
		6/12/2016	6/12/2016	6/12/2016	6/12/2016	6/12/2016	6/12/2016	6/12/2016
Analytical Result ($\mu\text{g}/\text{m}^3$)								
Propylbenzene	150000	<5.7	<6.1	<5.7	<5.4	<5.9	<5.6	<5.9
Styrene	150000	<4.9	<5.3	17	2.2 J	0.96 J	1.7 J	<5.2
Tetrachloroethene	1600	<7.9	<8.4	<7.9	<7.5	<8.2	<7.8	<8.2
Tetrahydrofuran	290000	<3.4	<3.6	<3.4	<3.2	<3.6	<3.4	<3.6
Toluene	730000	4.2 J	4.3 J	1.6 J	8.1	1.3 J	5.5	1.3 J
trans-1,2-Dichloroethene	---	<4.6	<4.9	<4.6	<4.4	<4.8	<4.5	<4.8
trans-1,3-Dichloropropene	---	<5.3	<5.6	<5.3	<5	<5.5	<5.2	<5.5
Trichloroethene	100	<6.2	3.2 J	<6.2	<5.9	<6.5	<6.2	1.2 J
Vinyl Chloride	93	<3	<3.2	<3	<2.8	<3.1	<2.9	<3.1
Total Xylenes	15000	1.6 J	1.5 J	9 J	4.9 J	0.96 J	8.9 J	1.3 J
Methane (%)	0.5	0.00018 J	0.0002 J	0.00023	0.0002 J	0.00018 J	0.00025 J	0.00016 J

Notes:

Detected results are shown in bold. Values which exceed the screening level are shown shaded.

---: The USEPA has not developed a vapor intrusion screening level for this parameter.

J: Indicates an estimated value

J0: Indicates an estimated value due to bias in the continuing calibration verification (CCV)

U: Indicates the analyte was not detected above the reporting limit. However, the reporting limit is approximate

Table 6
Building 15 Sub-Slab Sample Results- June 2016

Compound	Industrial Sub-Slab Screening Level ($\mu\text{g}/\text{m}^3$)	Sample ID/Sample Date
		B15SS-1
		6/12/2016
		Analytical Result ($\mu\text{g}/\text{m}^3$)
1,1,1-Trichloroethane	730000	<6.2
1,1,2,2-Tetrachloroethane	7	<7.8
1,1,2-Trichloroethane	26	<6.2
1,1-Dichloroethane	260	<4.6
1,1-Dichloroethene	29000	<4.5
1,2,4-Trichlorobenzene	290	<34
1,2,4-Trimethylbenzene	1000	<5.6
1,2-Dibromoethane (EDB)	0.68	<8.7
1,2-Dichlorobenzene	29000	<6.8
1,2-Dichloroethane	16	<4.6
1,2-Dichloropropane	41	<5.2
1,3,5-Trimethylbenzene	---	<5.6
1,3-Butadiene	14	<2.5
1,3-Dichlorobenzene	---	<6.8
1,4-Dichlorobenzene	37	<6.8
1,4-Dioxane	82	1.7 J
2,2,4-Trimethylpentane	---	<5.3
2-Butanone (Methyl Ethyl Ketone)	730000	22
2-Hexanone	4400	2.2 J
3-Chloropropene	68	<14
4-Ethyltoluene	---	<5.6
Acetone	4500000	310
alpha-Chlorotoluene	8.3	<5.9
Benzene	52	<3.6
Bromodichloromethane	11	<7.6
Bromoform	370	<12
Bromomethane	730	<44
Carbon Disulfide	100000	15
Carbon Tetrachloride	68	<7.1
Chlorobenzene	7300	<5.2
Chloroethane	1500000	<12
Chloroform	18	<5.5
Chloromethane	13000	<23 UJJ
cis-1,2-Dichloroethene	---	<4.5
cis-1,3-Dichloropropene	---	<5.2
Cumene	58000	<5.6
Cyclohexane	880000	<3.9
Dibromochloromethane	---	<9.7
Ethanol	---	34 JOJ
Ethylbenzene	160	<4.9
Freon 11	---	<6.4
Freon 113	4400000	<8.7

Table 6
Building 15 Sub-Slab Sample Results- June 2016

Compound	Industrial Sub-Slab Screening Level ($\mu\text{g}/\text{m}^3$)	Sample ID/Sample Date
		B15SS-1
		6/12/2016
		Analytical Result ($\mu\text{g}/\text{m}^3$)
Freon 114	---	<7.9
Freon 12	15000	<5.6
Heptane	---	5.5
Hexachlorobutadiene	19	<48
Hexane	100000	<4
Isopropyl Alcohol	29000	<11
Methanol	2900000	<300
Methyl Isobutyl Ketone	440000	1.9 J
Methyl tert-butyl ether	1600	<4.1
Methylene Chloride	41000	<39
Naphthalene (TO-15)	12	1.7 J
Naphthalene (TO-17)	12	<2.5
Propylbenzene	150000	<5.6
Styrene	150000	1.1 J
Tetrachloroethene	1600	<7.7
Tetrahydrofuran	290000	1.9 J
Toluene	730000	7.3
trans-1,2-Dichloroethene	---	<4.5
trans-1,3-Dichloropropene	---	<5.2
Trichloroethene	100	<6.1
Vinyl Chloride	93	<2.9
Total Xylenes	15000	1.6 J
Methane (%)	0.5	<0.00023

Notes:

Detected results are shown in bold. Values which exceed the screening level are show

---: The USEPA has not developed a vapor intrusion screening level for this parameter.

J: Indicates an estimated value

J0: Indicates an estimated value due to bias in the continuing calibration verification.

UJ: Indicates the analyte was not detected above the reporting limit, however, the rep

Table 7
Building 18 Indoor Air Sample Results

Compound	Industrial Indoor Air Screening Level (ug/m ³)	Sample ID/Sample Date						
		B18IA-1	B18IA-1D	B18IA-2	B18IA-3	B18IA-4	B18IA-5	B18AA ¹
		7/9/2016	7/9/2016	7/9/2016	7/9/2016	7/9/2016	7/9/2016	7/12/2016
		Indoor Air					Ambient Air	
Analytical Result (ug/m ³)								
1,1,1-Trichloroethane	22000	<0.9	<0.9	<0.93	<0.88	<0.87	<0.91	<0.87
1,1,2,2-Tetrachloroethane	0.21	<1.1	<1.1	<1.2	<1.1	<1.1	<1.1	<1.1
1,1,2-Trichloroethane	0.77	<0.9	<0.9	<0.93	<0.88	<0.87	<0.91	<0.87
1,1-Dichloroethane	7.7	<0.67	<0.67	<0.69	<0.65	<0.65	<0.68	<0.64
1,1-Dichloroethene	880	<0.65	<0.66	<0.68	<0.64	<0.63	<0.66	<0.63
1,2,4-Trichlorobenzene	8.8	<6.1	<6.2	<6.3	<6	<5.9	<6.2	<5.9
1,2,4-Trimethylbenzene	31	0.2 J	<0.82	0.82 J	<0.79	0.2 J	0.2 J	<0.78
1,2-Dibromoethane (EDB)	0.02	<1.3	<1.3	<1.3	<1.2	<1.2	<1.3	<1.2
1,2-Dichlorobenzene	880	<0.99	<1	<1	<0.97	<0.96	<1	<0.96
1,2-Dichloroethane	0.47	5	4.8	4.4	1.5	3.6	3.2	<0.64
1,2-Dichloropropane	1.2	<0.76	<0.77	<0.79	<0.74	<0.74	<0.77	<0.73
1,3,5-Trimethylbenzene	---	<0.81	<0.82	0.3 J	<0.79	<0.79	<0.82	<0.78
1,3-Butadiene	0.41	<0.36	<0.37	<0.38	<0.36	<0.35	<0.37	<0.35
1,3-Dichlorobenzene	---	<0.99	<1	<1	<0.97	<0.96	<1	<0.96
1,4-Dichlorobenzene	1.1	<0.99	<1	<1	<0.97	<0.96	<1	<0.96
1,4-Dioxane	2.5	<0.59	<0.6	<0.62	<0.58	<0.58	<0.6	3
2,2,4-Trimethylpentane	---	<3.8	<3.9	<4	<3.8	<3.7	<3.9	<3.7
2-Butanone (Methyl Ethyl Ketone)	22000	3.2 J	7.6 J	3.6 J	3.2 J	2.2 J J	1.9 J J	5.2 J
2-Hexanone	130	0.45 J	0.4 J	0.54 J	0.43 J	<3.3	<3.4	<3.2
3-Chloropropene	2	<2.6	<2.6	<2.7	<2.5	<2.5	<2.6	<2.5
4-Ethyltoluene	---	<0.81	<0.82	0.66 J	<0.79	0.2 J	0.19 J	<0.78
Acetone	140000	26	33	32	24	32	26	87
alpha-Chlorotoluene	0.25	<0.85 UJ	<0.86 UJ	<0.88 UJ	<0.83 UJ	<0.83 UJ	<0.86 UJ	<0.82 UJ
Benzene	1.6	0.22 J	0.29 J	0.56	0.17 J	0.17 J	0.25 J	0.32 J
Bromodichloromethane	0.33	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Bromoform	11	<1.7	<1.7	<1.8	<1.7	<1.6	<1.7	<1.6
Bromomethane	22	<3.2	<3.2	<3.3	<3.1	<3.1	<3.2	<3.1
Carbon Disulfide	3100	<2.6	0.27 J	<2.7	0.27 J	<2.5	<2.6	<2.5
Carbon Tetrachloride	2	0.41 J	0.39 J	0.38 J	0.46 J	0.69 J	0.39 J	0.44 J
Chlorobenzene	220	<0.76	<0.76	<0.79	<0.74	<0.74	<0.77	<0.73
Chloroethane	44000	<2.2	<2.2	<2.2	<2.1	<2.1	<2.2	<2.1
Chloroform	0.53	0.24 J	0.21 J	0.24 J	<0.79	0.16 J	0.21 J	<0.78
Chloromethane	390	1.9	2	1.8	1.8	2	2.1	2.2
cis-1,2-Dichloroethene	---	<0.65	<0.66	<0.68	<0.64	<0.63	<0.66	<0.63
cis-1,3-Dichloropropene	---	<0.75	<0.75	<0.78	<0.73	<0.73	<0.76	<0.72
Cumene	1800	<0.81	<0.82	<0.84	<0.79	<0.79	<0.82	<0.78
Cyclohexane	26000	0.14 J	0.12 J	0.68	<0.55	<0.55	0.11 J	<0.55
Dibromochloromethane	---	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4
Ethanol	---	28	23	48	24	54	51	10
Ethylbenzene	4.9	0.34 J	0.25 J	0.46 J	<0.7	0.79	0.45 J	<0.69
Freon 11	---	33	27	44	14	18	16	2.1
Freon 113	130000	0.56 J	0.54 J	0.58 J	0.92 J	0.63 J	0.62 J	1 J
Freon 114	---	<1.2	<1.2	<1.2	<1.1	<1.1	<1.2	<1.1
Freon 12	440	3.1	2.9	3.1	3	3.2	3.3	3
Heptane	---	<0.68	1.1	1.4	<0.66	<0.66	0.36 J	0.31 J
Hexachlorobutadiene	0.56	<8.8	<8.8	<9.1	<8.6	<8.5	<8.9	<8.5
Hexane	3100	0.34 J	0.48 J	0.61	0.15 J	0.16 J	0.16 J	0.19 J
Isopropyl Alcohol	880	15	13	33	10	50	31	6.2
Methanol	88000	<220	<220	<220	<210	<210	<220	<210
Methyl Isobutyl Ketone	13000	0.32 J	0.36 J	0.75 J 0	<0.66	<0.66	<0.68	<0.65
Methyl tert-butyl ether	47	<0.59	<0.6	<0.62	<0.58	<0.58	<0.6	<0.57
Methylene Chloride	1200	1.2	1.2	1.4	0.66 J	0.75 J	1 J	0.89 J
Naphthalene (TO-15)	0.36	0.19 J	0.18 J	0.16 J	0.12 J	0.24 J	0.16 J	0.12 J
Naphthalene (TO-17)	0.36	0.16	<0.088	0.046 J	0.11	0.15	0.39	<0.06

Table 7
Building 18 Indoor Air Sample Results

Compound	Industrial Indoor Air Screening Level (ug/m ³)	Sample ID/Sample Date						
		B18IA-1	B18IA-1D	B18IA-2	B18IA-3	B18IA-4	B18IA-5	B18AA ¹
		7/9/2016	7/9/2016	7/9/2016	7/9/2016	7/9/2016	7/9/2016	7/12/2016
		Indoor Air					Ambient Air	
Analytical Result (ug/m ³)								
Propylbenzene	4400	<0.81	<0.82	0.21 J	<0.79	<0.79	<0.82	<0.78
Styrene	4400	0.15 J	0.18 J	0.29 J	0.12 J	0.22 J	0.26 J	0.07 J
Tetrachloroethene	47	<1.1	<1.1	<1.2	<1.1	<1.1	<1.1	<1.1
Tetrahydrofuran	8800	0.96 J	<2.4	<2.5	<2.4	<2.4	<2.5	<2.3
Toluene	22000	7.7	7.9	11	4.3	15	13	1.4
trans-1,2-Dichloroethene	---	<0.65	<0.66	<0.68	<0.64	<0.63	<0.66	<0.63
trans-1,3-Dichloropropene	---	<0.75	<0.75	<0.78	<0.73	<0.73	<0.76	<0.72
Trichloroethene	3	3.2	2.9	2.1	1.5	3.6	2.9	<0.85
Vinyl Chloride	2.8	<0.42	<0.42	<0.44	<0.41	<0.41	<0.43	<0.41
Total Xylenes	440	1.17 J	1.01 J	1.72 J	0.89 J	2.76	1.83 J	0.17 J
Methane (%)	0.5	0.00016	0.0002	0.00018	0.00018	0.0002	0.00019	0.00018

Notes:

¹ Ambient air sample B18AA was also used as the ambient air sample for indoor air sample B30IA-1 collected in Building 30 on July 9, 2016.

Detected results are shown in bold. Values which exceed the screening level are shown shaded.

---: The USEPA has not developed a vapor intrusion screening level for this parameter.

J: Indicates an estimated value

UJ: Indicates the analyte was not detected above the reporting limit, however, the reporting limit is approximate

Naphthalene by TO-17 in B18AA collected on 7/8/2016

Table 8
Building 18 Sub-Slab Sample Results- July 2016

Compound	Industrial Sub-Slab Screening Level (ug/m ³)	Sample ID/Sample Date					
		B18SS-1	B18SS-1D	B18SS-2	B18SS-3	B18SS-4	B18SS-5
		7/11/2016	7/11/2016	7/12/2016	7/11/2016	7/12/2016	7/12/2016
		Analytical Result (ug/m ³)					
1,1,1-Trichloroethane	730000	<6.5	<6.5	<6.5	<6.5	<6.7	<6.4
1,1,2,2-Tetrachloroethane	7	<8.2	<8.2	<8.2	<8.2	<8.5	<8
1,1,2-Trichloroethane	26	<6.5	<6.5	<6.5	<6.5	<6.7	<6.4
1,1-Dichloroethane	260	<4.8	<4.8	<4.8	<4.8	<5	<4.7
1,1-Dichloroethene	29000	<4.8	<4.7	<4.7	<4.8	<4.9	<4.6
1,2,4-Trichlorobenzene	290	<36	<35	<35	<36	<37	<35
1,2,4-Trimethylbenzene	1000	2.2 J	<5.8	<5.8	<5.9	<6.1	<5.8
1,2-Dibromoethane (EDB)	0.68	<9.2	<9.1	<9.1	<9.2	<9.5	<9
1,2-Dichlorobenzene	29000	<7.2	<7.2	<7.2	<7.2	<7.4	<7
1,2-Dichloroethane	16	<4.8	<4.8	1 J	<4.8	<5	<4.7
1,2-Dichloropropane	41	<5.5	<5.5	<5.5	<5.5	<5.7	<5.4
1,3,5-Trimethylbenzene	---	<5.9	<5.8	<5.8	<5.9	<6.1	<5.8
1,3-Butadiene	14	<2.6	<2.6	<2.6	<2.6	<2.7	<2.6
1,3-Dichlorobenzene	---	<7.2	<7.2	<7.2	<7.2	<7.4	<7
1,4-Dichlorobenzene	37	<7.2	<7.2	<7.2	<7.2	<7.4	<7
1,4-Dioxane	82	<17	<17	<17	<17	<18	<17
2,2,4-Trimethylpentane	---	0.99 J	1.1 J	0.95 J	1.1 J	1 J	1 J
2-Butanone (Methyl Ethyl Ketone)	730000	15	12 J	6.2 J	21	11 J	9.6 J
2-Hexanone	4400	<20	<19	<19	3.4 J	<20	<19
3-Chloropropene	68	<15	<15	<15	<15	<15	<15
4-Ethyltoluene	---	<5.9	<5.8	<5.8	<5.9	<6.1	<5.8
Acetone	4500000	62	53	31	150	55	27 J
alpha-Chlorotoluene	8.3	<6.2	<6.2	<6.2	<6.2	<6.4	<6
Benzene	52	1.2 J	0.82 J	1 J	3.5 J	1.3 J	<3.7
Bromodichloromethane	11	<8	<8	<8	<8	<8.3	<7.8
Bromoform	370	<12	<12	<12	<12	<13	<12
Bromomethane	730	<47	<46	<46	<47	<48	<45
Carbon Disulfide	100000	<15	<15	<15	<15	7.5 J	4.8 J
Carbon Tetrachloride	68	<7.6	<7.5	<7.5	<7.6	<7.8	<7.4
Chlorobenzene	7300	<5.5	<5.5	<5.5	<5.5	<5.7	<5.4
Chloroethane	1500000	<13	<12	<12	<13	<13	<12
Chloroform	18	<5.8	<5.8	<5.8	<5.8	<6	3.9 J
Chloromethane	13000	<25	<24	<24	<25	<26	<24
cis-1,2-Dichloroethene	---	<4.8	<4.7	<4.7	<4.8	<4.9	<4.6
cis-1,3-Dichloropropene	---	<5.4	<5.4	<5.4	<5.4	<5.6	<5.3
Cumene	58000	<5.9	<5.8	<5.8	<5.9	<6.1	<5.8
Cyclohexane	880000	<4.1	0.93 J	<4.1	0.64 J	<4.2	<4
Dibromochloromethane	---	<10	<10	<10	<10	<10	<10
Ethanol	---	30 J	36 J	33 J	45 J	62 J	20 J
Ethylbenzene	160	<5.2	<5.2	<5.2	<5.2	<5.4	<5.1
Freon 11	---	10	6.6 J	7.6	4.2 J	2.8 J	2.5 J
Freon 113	4400000	<9.2	<9.1	<9.1	<9.2	<9.5	<9
Freon 114	---	<8.4	<8.3	<8.3	<8.4	<8.6	<8.2
Freon 12	15000	2.4 J	5.1 J	2.5 J	2.5 J	2.6 J	2.5 J
Heptane	---	<4.9	3.4 J	<4.9	2.5 J	2.4 J	<4.8
Hexachlorobutadiene	19	<51	<51	<51	<51	<53	<50
Hexane	100000	<4.2	<4.2	<4.2	<4.2	<4.4	<4.1
Isopropyl Alcohol	29000	14	110	37	46	130	6.2 J
Methanol	2900000	320	<310	<310	400	<320	<310
Methyl Isobutyl Ketone	440000	<4.9	<4.9	<4.9	2.4 J	2.9 J	<4.8
Methyl tert-butyl ether	1600	<17	<17	<17	<17	<18	<17
Methylene Chloride	41000	<42	5.7 J	<41	4.6 J	<43	<41
Naphthalene (TO-15)	12	0.77 J	0.58 J	<12	<12	4 J	2.1 J
Naphthalene (TO-17)	12	1.8 J	1.4 J	1.7 J	12	3.8	2.6 J

Table 8
Building 18 Sub-Slab Sample Results- July 2016

Compound	Industrial Sub-Slab Screening Level (ug/m ³)	Sample ID/Sample Date					
		B18SS-1	B18SS-1D	B18SS-2	B18SS-3	B18SS-4	B18SS-5
		7/11/2016	7/11/2016	7/12/2016	7/11/2016	7/12/2016	7/12/2016
		Analytical Result (ug/m ³)					
Propylbenzene	150000	<5.9	<5.8	<5.8	<5.9	<6.1	<5.8
Styrene	150000	<5.1	1.1 J	<5.1	<5.1	1.2 J	<5
Tetrachloroethene	1600	<8.1	<8.1	2.6 J	<8.1	<8.4	7.6 J
Tetrahydrofuran	290000	<3.5	<3.5	<3.5	<3.5	<3.6	<3.4
Toluene	730000	2.4 J	24	7	13	27	2 J
trans-1,2-Dichloroethene	---	<4.8	<4.7	<4.7	<4.8	<4.9	<4.6
trans-1,3-Dichloropropene	---	<5.4	<5.4	<5.4	<5.4	<5.6	<5.3
Trichloroethene	100	<6.4	<6.4	<6.4	<6.4	<6.6	<6.3
Vinyl Chloride	93	<3.1	<3	<3	<3.1	<3.2	<3
Total Xylenes	15000	1.5 J	1.7 J	<5.2	3.5 J	1.7 J	<5.1
Methane (%)	0.5	0.000096 J	0.00016 J	0.0002 J	0.00016 J	0.00016 J	0.0001 J

Notes:

Detected results are shown in bold. Values which exceed the screening level are shown shaded.

---: The USEPA has not developed a vapor intrusion screening level for this parameter.

J: Indicates an estimated value

Table 9
Building 30 Indoor Air Sample Results- July 2016

Compound	Industrial Indoor Air Screening Level (ug/m ³)	Sample ID/Sample Date	
		B30IA-1	
		7/9/2016 ¹	
		Indoor Air	
		Analytical Result (ug/m ³)	
Building 5 Area COCs			
Benzene	1.6	0.23 J	
Ethylbenzene	4.9	<0.71	
Toluene	22000	0.7	
Total Xylenes	440	0.54 J	
Acetone	140000	16	
Methyl Isobutyl Ketone	13000	0.49 J	
Isopropyl Alcohol	880	7.3	
Methanol	88000	<210	
Methane (%)	0.5	0.00037	
Other TO-15 Compounds			
1,1,1-Trichloroethane	22000	<0.89	
1,1,2,2-Tetrachloroethane	0.21	<1.1	
1,1,2-Trichloroethane	0.77	<0.89	
1,1-Dichloroethane	7.7	<0.66	
1,1-Dichloroethene	880	<0.65	
1,2,4-Trichlorobenzene	8.8	<6.1	
1,2,4-Trimethylbenzene	31	<0.81	
1,2-Dibromoethane (EDB)	0.02	<1.3	
1,2-Dichlorobenzene	880	<0.99	
1,2-Dichloroethane	0.47	<0.66	
1,2-Dichloropropane	1.2	<0.76	
1,3,5-Trimethylbenzene	---	<0.81	
1,3-Butadiene	0.41	<0.36	
1,3-Dichlorobenzene	---	<0.99	
1,4-Dichlorobenzene	1.1	<0.99	
1,4-Dioxane	2.5	<0.59	
2,2,4-Trimethylpentane	---	<3.8	
2-Butanone (Methyl Ethyl Ketone)	22000	3.6	
2-Hexanone	130	0.7 J	
3-Chloropropene	2	<2.6	
4-Ethyltoluene	---	<0.81	
alpha-Chlorotoluene	0.25	<0.85	
Bromodichloromethane	0.33	<1.1	
Bromoform	11	<1.7	
Bromomethane	22	<3.2	
Carbon Disulfide	3100	2 J	
Carbon Tetrachloride	2	0.42 J	
Chlorobenzene	220	<0.76	
Chloroethane	44000	<2.2	
Chloroform	0.53	<0.8	
Chloromethane	390	1.2 J	
cis-1,2-Dichloroethene	---	<0.65	
cis-1,3-Dichloropropene	---	<0.74	
Cumene	1800	<0.81	
Cyclohexane	26000	<0.56	
Dibromochloromethane	---	<1.4	
Ethanol	---	11	
Freon 11	---	1.4	
Freon 113	130000	0.54 J	
Freon 114	---	<1.1	
Freon 12	440	1.9	
Heptane	---	<0.67	
Hexachlorobutadiene	0.56	<8.7	
Hexane	3100	<0.58	
Methyl tert-butyl ether	47	<0.59	
Methylene Chloride	1200	0.26 J	
Naphthalene (TO-15)	0.36	<4.3	
Naphthalene (TO-17)	0.36	0.087	

Table 9
Building 30 Indoor Air Sample Results- July 2016

Compound	Industrial Indoor Air Screening Level (ug/m ³)	Sample ID/Sample Date	
		B30IA-1	
		7/9/2016 ¹	
		Indoor Air	
		Analytical Result (ug/m ³)	
Propylbenzene	4400	<0.81	
Styrene	4400	<0.7	
Tetrachloroethene	47	<1.1	
Tetrahydrofuran	8800	<2.4 UJ J	
trans-1,2-Dichloroethene	---	<0.65	
trans-1,3-Dichloropropene	---	<0.74	
Trichloroethene	3	<0.88	
Vinyl Chloride	2.8	<0.42	

Notes:

¹ for this sample round, ambient air sample B18AA (see Table 8) was collected as the ambient air sample for indoor air sample B30IA-1 collected on July 9, 2016.

Detected results are shown in bold. Values which exceed the screening level are shown shaded.

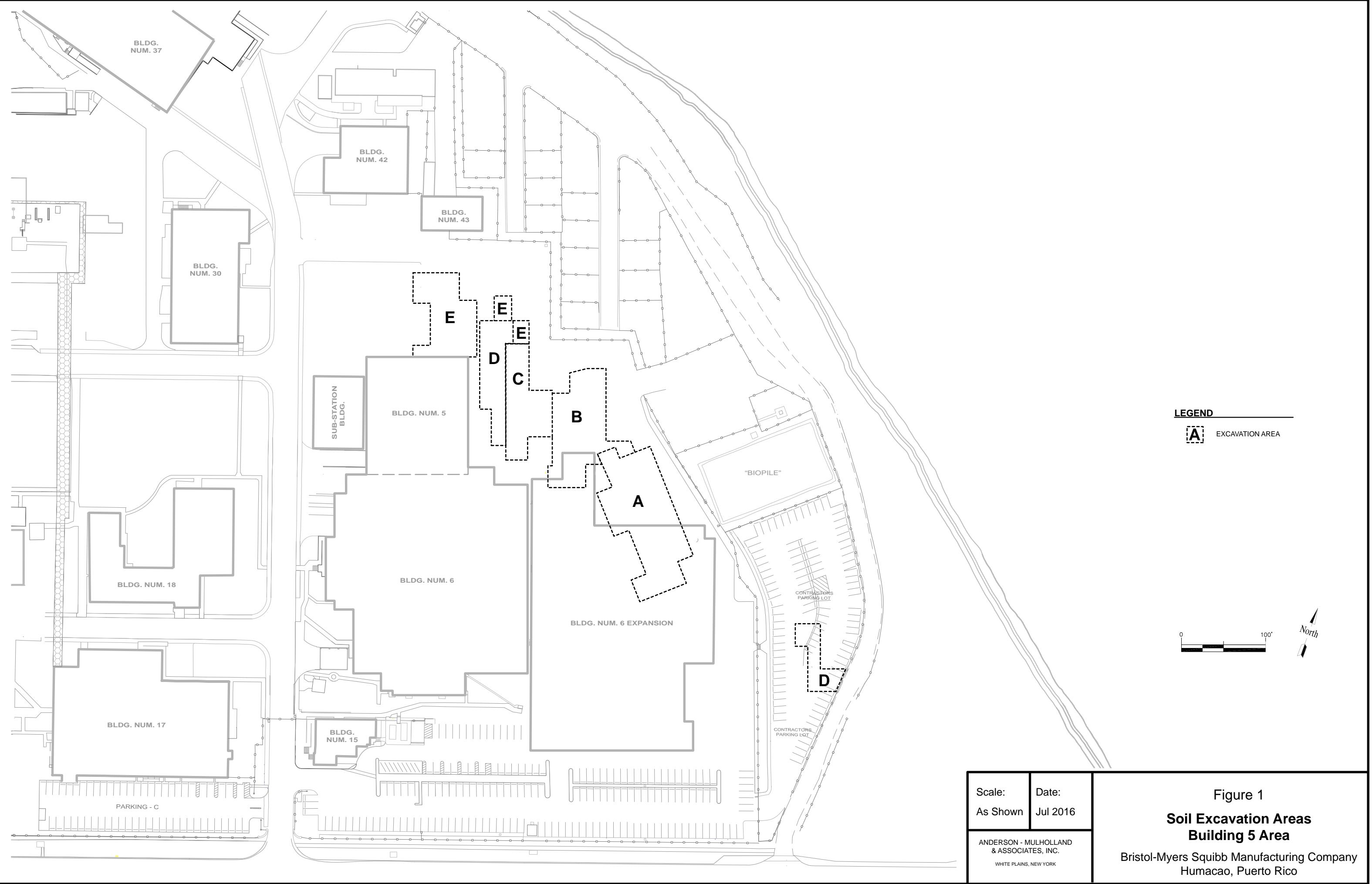
---: The USEPA has not developed a vapor intrusion screening level for this parameter.

J: Indicates an estimated value

JJ: Indicates field duplicate precision criteria was not met.

J0: Indicates an estimated value due to bias in the CCV

Figures



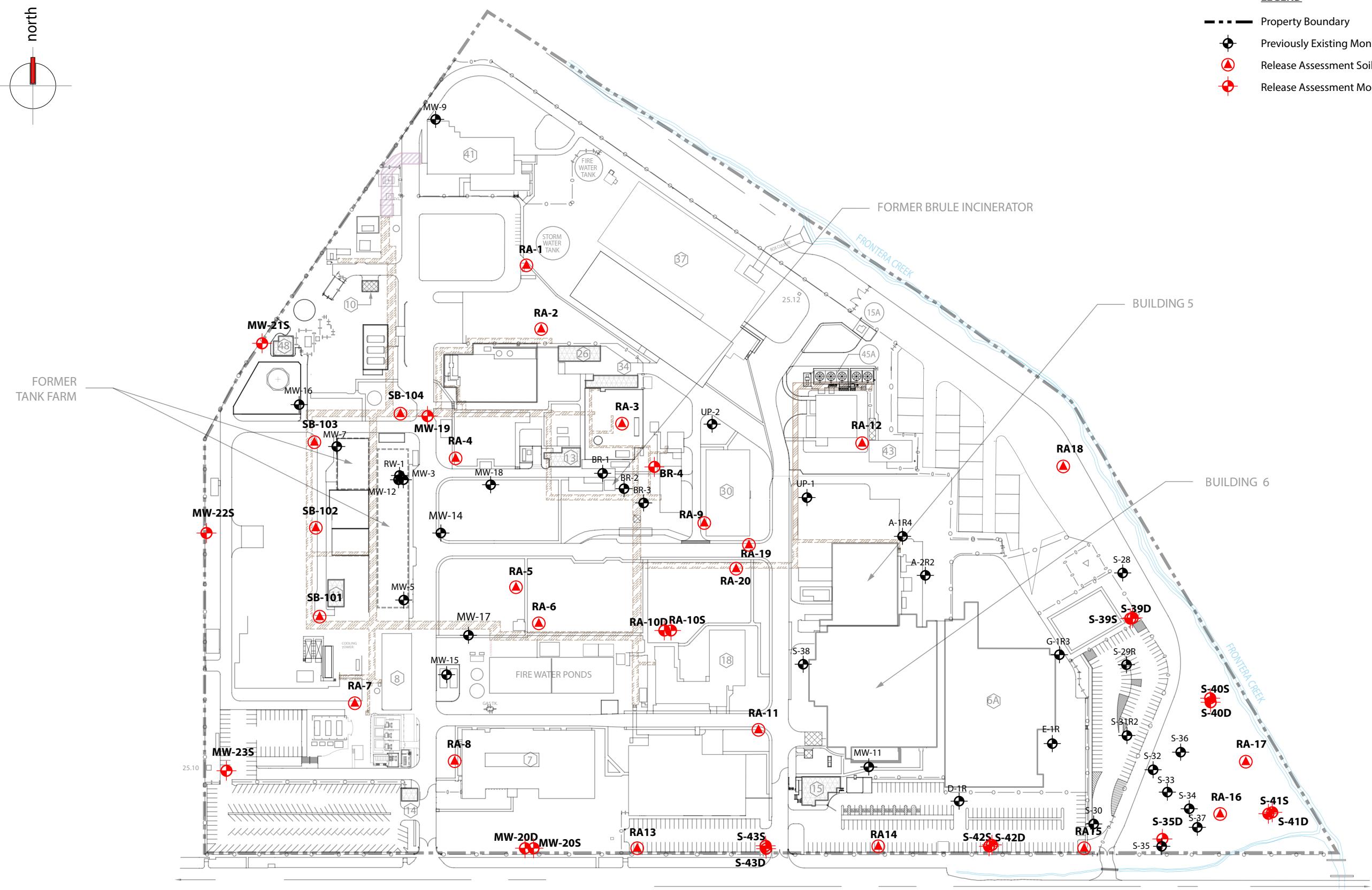
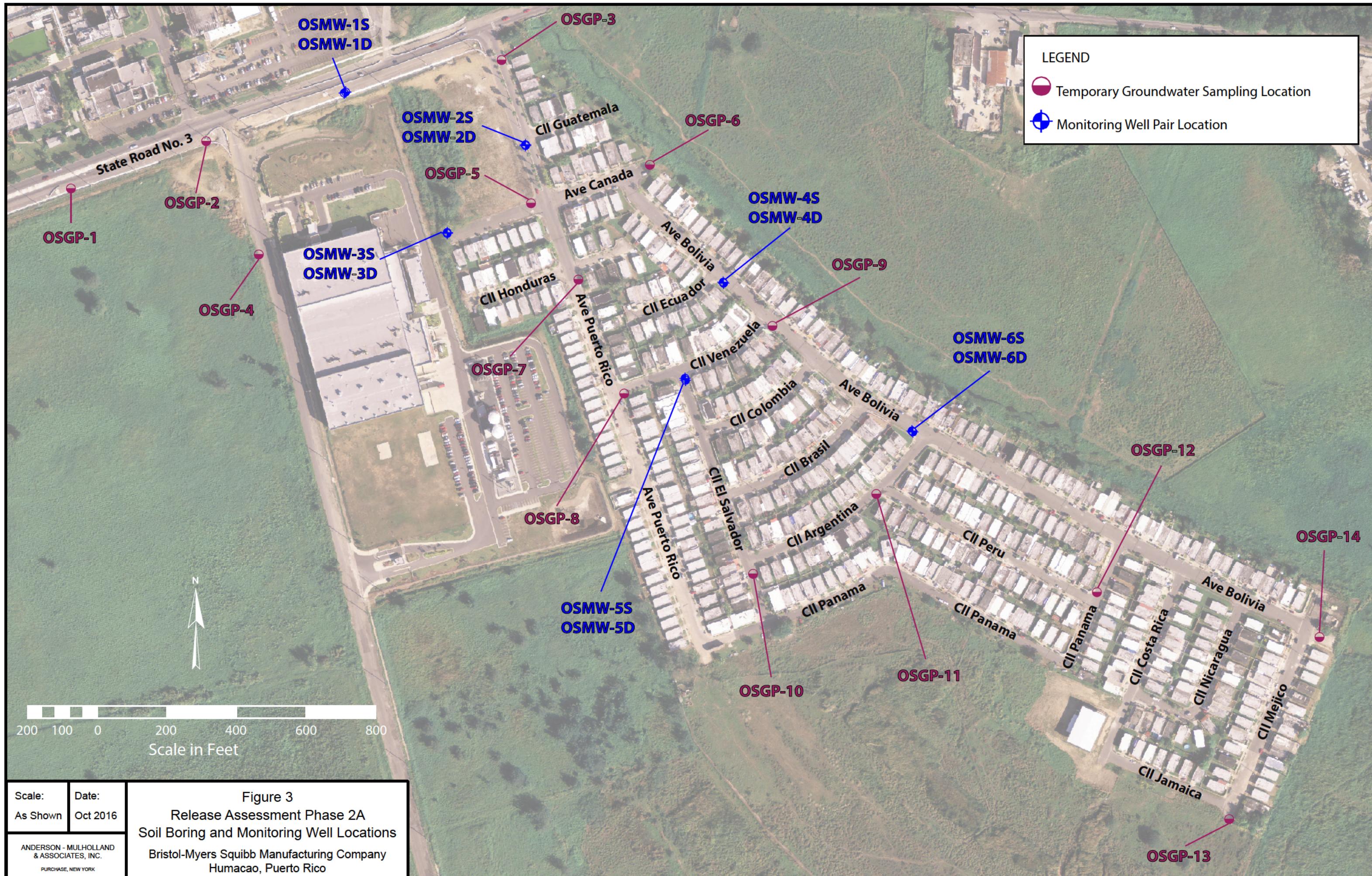


Figure 2

Release Assessment Phase 1
Soil Boring and Monitoring Well Locations

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

Scale:	Date:
As Shown	Jun 2016
ANDERSON - MULHOLLAND & ASSOCIATES, INC.	
PURCHASE, NEW YORK	



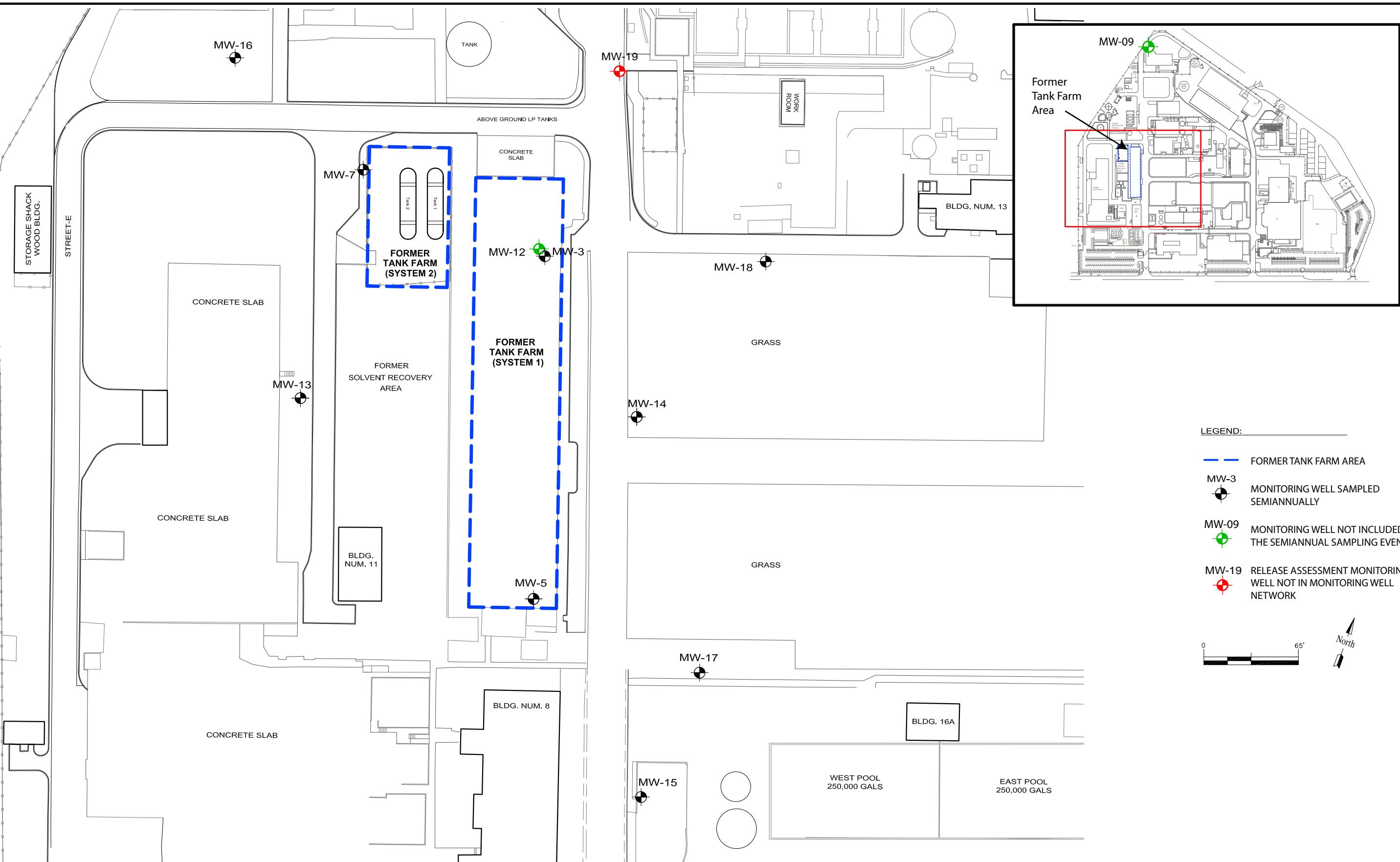
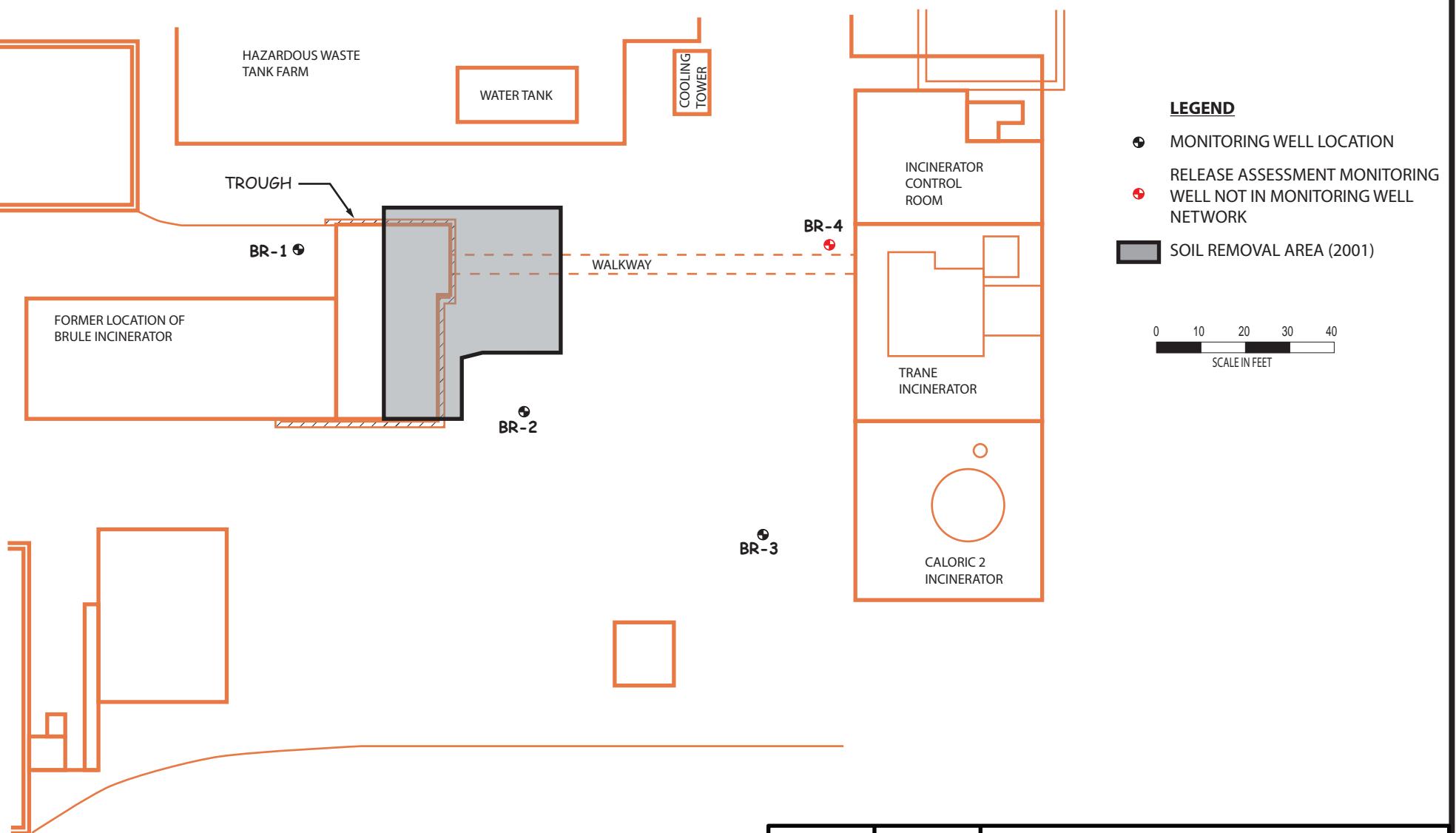


Figure 4
Location of Groundwater Monitoring Wells
Former Tank Farm Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

Scale	Date
	Jul 2016

ANDERSON - MULHOLLAND & ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO



Scale: As Shown	Date: Jul 2016
ANDERSON - MULHOLLAND & ASSOCIATES, INC. PURCHASE, NEW YORK	

Figure 5
Location of Groundwater Monitoring Wells
Brule Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

